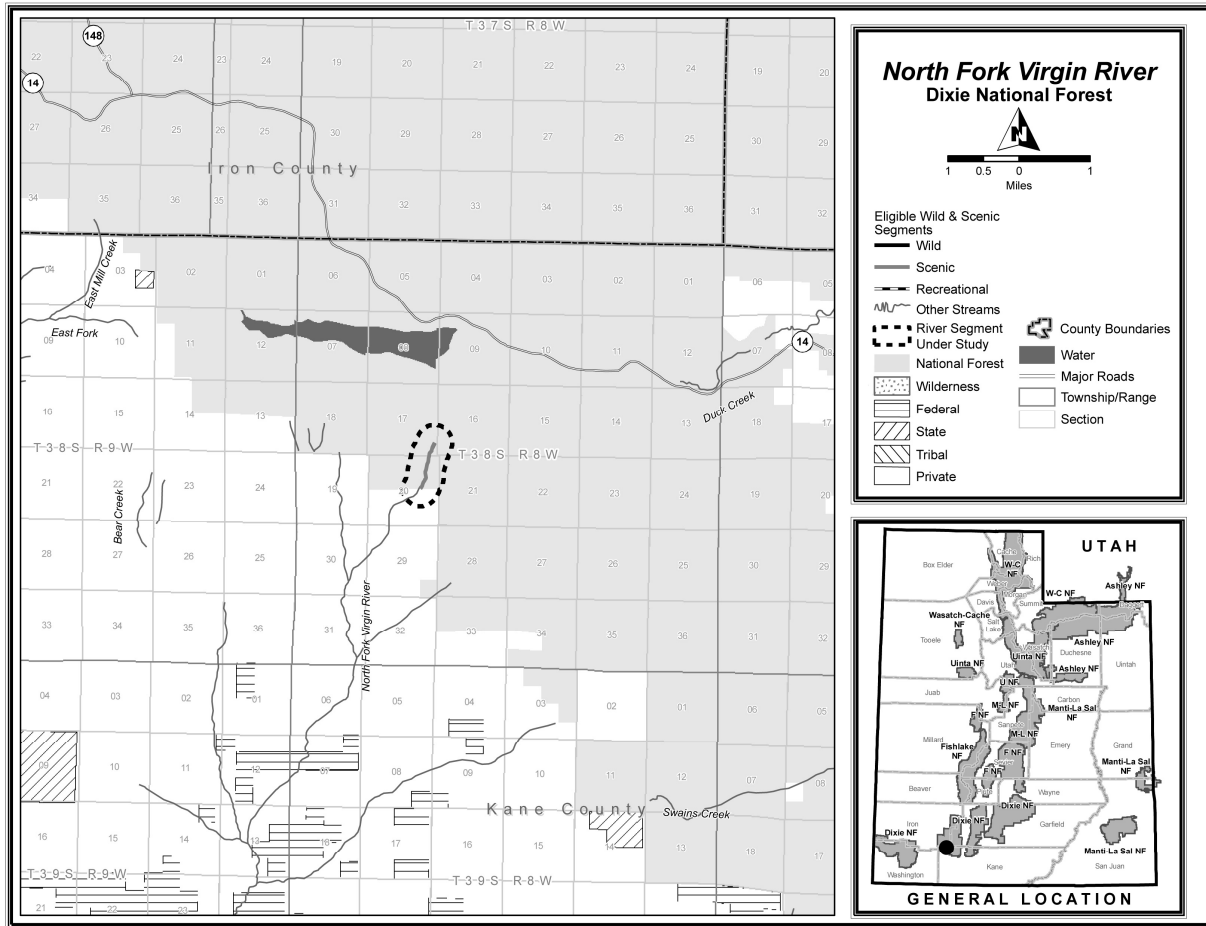


## North Fork Virgin River Suitability Evaluation Report (SER)



### STUDY AREA SUMMARY

**Name of River:** North Fork Virgin River

**River Mileage:**

*North Fork Virgin River*

Studied: 25 miles, from its head waters to confluence with the Virgin River

Eligible: 0.68 miles, from its headwaters to the Forest boundary

**Location:**

North Fork Virgin River	Dixie National Forest, Cedar City Ranger District, Kane County, Utah		Congressional District 2	
	Start	End	Classification	Miles
Segment 1	NW ¼ SE ¼ Sect. 17, T 38 S, R 8 W, SLM	SW ¼ NW ¼ Sect. 20, T 38 S, R 8 W, SLM	Scenic	0.68

**Physical Description of River Segment:**

The North Fork of the Virgin River begins at Cascade Falls, a perennial spring that is fed by Navajo Lake through underground lava tubes and a limestone solution channel. Cascade Falls is located in the Pink Cliffs on the south edge of the Markagunt Plateau. From here, the river flows as a boulder dominated, cascading to step-pool stream system through the Cretaceous rocks of the Grey Cliffs before cutting down

through the Kolob Terrace into the Jurassic and Triassic rocks that define the regional landscape and Zion National Park. The stream corridor supports a diverse riparian plant community. Near Cascade Falls the watershed supports an abundance of bristlecone pine trees.

### **ELIGIBILITY**

**Name and Date of Eligibility Document:** Fishlake and Dixie National Forest Wild and Scenic River Evaluation (Pg. 16)

**Determination of Free-flow:** There are no known diversions of the North Fork of the Virgin River on the National Forest.

#### **Summary of Outstandingly Remarkable Values:**

**Scenic and Geological** – The North Fork of the Virgin River begins at Cascade Falls, a spring that is fed by Navajo Lake through underground lava tubes and limestone solution channel. The river flows down the south face of the Markagunt Plateau through high elevation landscapes of Jurassic and Cretaceous sediment deposits, with extensive viewsheds and examples of stream erosion in Utah including views of Zion National Park. The upper portions of the watershed are located amidst the pink cliffs of the Virgin River rim. The stream corridor supports a diverse riparian plant community. Near Cascade Falls the watershed supports an abundance of bristlecone pine trees.

**Recreational** – The North Fork of the Virgin River provides a unique recreational opportunity for hiking, sightseeing, and studying the ecology of Southern Utah. The Cascade Falls National Recreation Trail (#32055) is one of the most popular and heavily used trails on the Dixie National Forest. The trail terminates at a viewpoint looking directly into the limestone cavern from which water exits onto the steep slope below, thus forming Cascade Falls. The Virgin River Rim Trail (#32011) also provides visitors a view of the river segment as it traverses the Virgin River rim above the falls.

### **CLASSIFICATION**

**Basis for the classification of river:** Scenic

No vehicular access to the river exists on National Forest. A four-wheel-drive road provides access to private property below the Forest Service boundary. The Cascade Falls Trail (#32055) begins at a trailhead 0.8 mile southeast of the falls and terminates at a viewing platform. Most of the river segment is not easily accessible from the trail.

### **SUITABILITY REPORT**

**Landownership and Land Uses** – The entire river corridor is located on the Cedar City Ranger District of the Dixie National Forest

<b>River Mile</b>	<b>Ownership</b>
0 – 0.68	Dixie National Forest (Cedar City Ranger District)

**Mineral and Energy Resource Activities** – There are no existing salable, locatable, or leasable mineral and energy resources development in the eligible segment. The NW corner of section 21 is, however, in a Utah Coal Land Withdrawal Area and is withdrawn from appropriation. The area is considered to have low potential for oil and gas resources.

**Water Resources Development** – There are no known existing water developments (dams, diversions or channel modifications) on this segment. Due to the steep terrain and limited access to the river, the potential for hydroelectric power generation is low. Designation into the Wild and Scenic river system does not affect existing, valid water rights.

**Transportation, Facilities, and Other Developments** – The North Fork of the Virgin River flows in a

southern direction on the National Forest. No vehicular access to the river exists on the National Forest. A four-wheel-drive road provides access to private property below the Forest Service boundary. The Cascade Falls Trail (#32055) provides access to a viewpoint at Cascade Fall. The trail is 0.80 miles long and is recognized as a National Recreation Trail. The trail begins at the trailhead that is located at the ending terminus of Forest Service Road #054. The trailhead is also accessible by the Virgin River Rim Trail (#32011) and the Markagunt ATV System (Trail #51). The trailhead facilities include restrooms and a large parking area.

**Grazing Activities** – The entire river segment is located in the North Fork Allotment (#00211). The allotment consists of 1967 acres and is currently vacant. The allotment has a capacity of 50 head of cattle and was last grazed in 1994 by 16 head of cattle.

**Recreation Activities** – The North Fork of the Virgin River provides a unique recreational opportunity for hiking, sightseeing, and studying the ecology of Southern Utah. The Cascade Falls National Recreation Trail (#32055) is one of the most popular and heavily used trails on the Dixie National Forest. The trail terminates at a viewpoint looking directly into the limestone cavern from which water exits onto the steep slope below, thus forming Cascade Falls. The Virgin River Rim Trail (#32011) also provides visitors a view of the river segment as it traverses the Virgin River rim above the falls.

**Other Resource Activities** – The river corridor is relatively small in size and located within rugged steep terrain. Below the Virgin River Rim, there is a notable die off of Douglas fir trees due to drought, age, and beetles. In the future, district managers may pursue projects (e.g., helicopter logging) to enhance scenery of the area. Other resource activities in the area are not foreseeable.

**Special Designations** – The Cascade Falls Trail (#32011) that accesses the eligible segment is one of over 900 trails listed as a National Recreation Trail. This trail was recognized for its caves, geological features, meadows, scenic viewpoints, valleys/canyons, and waterfall. The trail was designated as a National Recreation Trail on November 16, 1979.

Approximately 0.7 miles of this stream is recognized by the State of Utah as a Drinking Water Source Protection Zone. This designation defines the area where contaminants are limited from the surface and subsurface areas surrounding a surface source of drinking water supplying a public water system (PWS), over which or through which contaminants are reasonably likely to move toward and reach the source. Surface water means all water which is open to the atmosphere and subject to surface runoff, and subsurface water relates to any well, spring, tunnel, adit, or other underground opening from or through which groundwater flows or is pumped from subsurface water-bearing formations.

**Socio-Economic Environment** – The river segment, associated National Recreation Trail, and corridor are all located within Kane County. Local visitors and adjacent landowners in the North Fork area also come from Iron County to the west and Garfield County to the north. There are almost 1,000 cabins in this area. A growing number of these cabins are inhabited year round. If incorporated the Duck Creek Village area would have the potential to be the largest town in Kane County. Garfield County and Kane County contain gateway communities to large, heavily visited, and internationally significant and known national parks (Bryce Canyon, Grand Canyon, and Zion National Parks). Utah Heritage Highway 89 was designated by law by President George W. Bush. The highway connects Kane and Garfield counties near the river segment. It was designated to promote economic development and preserve the unique pioneer traditions of the area for future generations. Garfield and Kane County are largely rural counties where traditional natural resource economic endeavors have dominated historically. In recent years, there has been a growth in recreation, tourism, and services. Iron County is a fast growing urban area with a strong diversified economy.

Garfield, Iron, and Kane counties are all struggling to retain rural traditions and lifestyles as well as “working” connections with the land. In the face of rising land values and globalization, traditional industries such as farming and ranching are becoming more difficult.

One manifestation of these trends is the rise in second home ownership; the private lands near the North Fork Virgin River are increasingly occupied by residents from out of the area. Over 50% of the tax notifications in the three counties were sent out of county, many of them out of state, and even out of country. Educating these occasional land users about special values and proper use is becoming more difficult.

More specifically, trends and conditions by county:

**Garfield County**, the fifth largest county in the state has the highest percentage of federal land (over 90%) in a county in the state of Utah.<sup>1</sup> The county contains over one million acres of National Forest System lands (including the Box-Death Hollow Wilderness Area) and large areas of other federal land, including portions of Grand Staircase-Escalante National Monument, Bryce Canyon National Park, Capitol Reef National Park, and Glen Canyon National Recreation Area. There are only about 170,000 acres of private land in the county. Public lands provide both challenges and opportunities for economic development in the county. The county is sparsely populated and is only projected to grow at a 1.0 percent rate between 2005 and 2050, a rate below the state average.

According to a 2003 Utah Bureau of Economic Analysis Report, Garfield County residents had one of the five lowest levels of total personal income in the state for 2003. Additionally, Garfield County had the second highest unemployment rate (10.8 percent) in the state according to 2003 Utah Department of Workforce Services information, exceeded only by Emery County's 11.0 percent unemployment rate (2003). Slow job growth and unemployment are recurrent problems for the county. Traditionally, county residents have relied primarily upon ranching and timber. While there is a desire to retain these traditional sources of economic opportunity, services related to recreation and tourism are growing quickly in the county.

Services are projected to increase from a 30.1 percent share in the Garfield County economy in 2005 to a 37.8 percent share in 2030 (State of Utah 2003).

According to Garfield County, the growth in the recreation and tourism industries has not been strong enough to provide the economic growth that has been achieved in more diverse parts of the state (Bremner 2006).<sup>2</sup> While these services (mostly related to leisure and hospitality) represent the largest sector in the Garfield County economy, government jobs (the sector ranked second) make up a much higher percentage of payroll wages (State of Utah 2003). There is a perception that leisure and hospitality jobs will not pay as much as jobs in other more traditional sectors.<sup>3</sup> According to Garfield County, "... Garfield County is struggling economically. Schools are showing declining enrollment, and additional natural resource based industries have been all but eliminated in the county. . . . Garfield County is struggling and unless changes [in land management and opportunities] are made relatively soon, things will get tougher" (Bremner 2006). Also according to Garfield County Commissioner Maloy Dodds in testimony to Congress, "...most tourist-generated jobs generally are minimal skill, minimum wage jobs – not the kind that can support a family." Another important fact that the Commissioner noted, "Federal

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<sup>3</sup> In the book *Visions of the Grand Staircase-Escalante* (compiled at the time of the Grand Staircase-Escalante National Monument planning process in the 1990s), Gail Blattenberger and David Kiefer acknowledge, "[m]inimum wages plus tips at Ruby's Inn are what the locals [in Garfield County] envisage from the service industry, but high tech service enterprises are also viable given an investment in communications infrastructure." Blattenberger and Kiefer suggest that while based on past performance "economic well-being" is clearly an issue in Kane and Garfield counties, "[e]xtractive industries are not an optimal or even a viable solution to the economic situation in these counties." Furthermore, "change will certainly come to these economies" and be met with "resistance (because of) the desire for a land-based economy (which is) seen as crucial to the quality of life in the rural West." According to the authors, the key is to "find ways of preserving our land-based Western heritage and lifestyle (which are so important to rural residents) along with the natural treasures of the countryside." Roughly 10 years later, we seem to face the same conditions, trends, attitudes, fears, opportunities, and challenges (Blattenberger and Kiefer 1998).

destination areas [are] a mixed blessing at best” for Garfield County because increased visitors can be a burden to the county in terms of increased cost of garbage and search and rescue operations (Testimony to House Resources Committee’s Forest and Forest Health Subcommittee, June 15, 2005).

The closest community to the North Fork Virgin River, Hatch Town, is not expected to grow by more than 100 people in the next fifty years (2005 State of Utah Baseline projections).

**Iron County** has the largest acreage of available private lands of all the counties in the planning area. More specifically, there is a large amount of private land located from the Dixie National Forest boundary south to Zion National Park. Once North Fork Virgin River exits the forest, it flows across this private land before entering Zion National Park. Nonetheless, well over 50 percent of the county is comprised of federal land, including 200,000 acres of National Forest System land (including the Ashdown Gorge Wilderness Area). Iron County is one of the fastest growing areas of the state. From 2004 to 2005 Iron County grew at a rate of 6.4 percent (exceeded only by its neighbor to the south, Washington County, which grew at 8.4 percent) (State of Utah 2006). In a press release to announce these growth rates, the Governor states, “The southwestern counties of Washington and Iron, where the urban cities of St. George and Cedar City are located, experienced rapid growth in 2005. These are considered high amenity counties, offering a diversity of educational, tourism, retirement, and economic opportunities for local residents. Both Iron and Washington counties experienced population growth over twice the state rate in 2005,” (State of Utah 2005c). Population in Iron County is projected to grow from 40,212 in 2005 to 103,920 in 2050 – a 2.3 percent annual increase (one-half a percent above the statewide projection).

Government is the largest sector of the Iron County economy, but the service sector is projected to grow the fastest through 2030. The *People and the Forests* report projects services to grow from a 21.6 percent share in the Iron County economy to a 25.5 percent share in 2030. Government jobs are projected to retain about a 21 percent share (State of Utah 2003). Overall, Iron County has a relatively balanced and broad-based economy. County businesses have learned to leverage their unique geographic location in close proximity to several national parks and other public lands, and the presence of Southern Utah University and the Utah Shakespearean Festival to support economic development and growth. There is concern that rapid growth may compromise high quality of life that county residents have come to appreciate.

There is a proposal to reopen the historic iron mines west of Cedar City, though it remains to be seen if this development will proceed. Mineral development of iron ore could provide future growth. Despite a robust economy and high growth rate, Iron County continues to struggle with issues of poverty. According to *People and the Forests*, the Iron County poverty rate in 1999 was double the state rate. Furthermore, in the period from 1989 to 1999, Iron County saw its poverty rate increase, while the state saw a decrease of the population in poverty (State of Utah 2003).

**Kane County** is another county that is dominated by federal land, the majority of which is managed by the BLM. Although almost 85 percent of the county is managed by federal land management agencies, the Forest Service manages only about 125,000 acres.<sup>4</sup> Kane County experienced a 2.6% growth rate in 2004-05, this exceeds the State’s rate of 2.0% (State of Utah 2006). State population projections anticipate that Kane County will continue to grow at 1.4 percent annually from 2005 to 2050, below the state average of 1.8 percent (State of Utah 2005). The Kane County Commission feels that this projection is very low. The Commission believes that they are seeing a great deal of spillover growth from Washington County. Additionally, the Commission suggests that rapid growth in neighboring Fredonia, Arizona, should be noted because Kanab and Fredonia are in such close proximity that residents of the areas compete for the same jobs and other resources (Hulet 2006). Nonetheless, much of the growth in Kane County will likely be found in areas adjacent to or surrounded by National Forest System lands. Duck Creek Village, one of the largest communities surrounded by the Dixie National Forest, continues

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<sup>4</sup> Kane County maintains a close relationship with the Kaibab National Forest across the state border in Arizona.

to grow rapidly, creating challenges for both the county and the Forest Service.<sup>5</sup>

Some of the economic fortunes of Kane County seem to be improving. Kane County had one of the higher percent changes in the state in personal income from 2000 to 2003 (Bureau of Economic Analysis 2003). Some – including the Kane County Commission – suggest that this number is heavily influenced by retirees. They also suggest that annual income and working wages are going down in the county, an issue of much concern for the County Commission (Hulet 2006). As with many other counties in the planning area, Kane County is projected to rely more heavily upon the service sector in the future. As in Garfield County, the leisure and hospitality sector provides the most jobs in the county, but the government sector makes the largest contribution to payroll wages (State of Utah 2003).

The closest incorporated communities to the North Fork Virgin River in Kane County—Alton, Glendale, and Orderville—are expected to double in size from about 1,000 residents collectively to about 2,000 residents collectively in the next fifty years (2005 Utah Baseline Population Projections).

**Current Administration and Funding Needs if Designated** – The current administering agency is the USFS. If downstream segments were designated, then Kane County, Washington County, and Iron County, along with private land owners and the National Park Service could partner in management.

The following information is based on 2001 data, which doesn't account for inflation over the past six years, but is the best available data. If a river is designated as Wild, Scenic, or Recreational, the actual cost of preparing the comprehensive river management plan would average \$200,000 per plan for 86 segments, which would cost approximately \$17.2 million the first two to three years following designation. It was estimated that annual management costs for a high complexity river would be \$200,000; a moderate complexity river would be \$50,000; and a low complexity river at \$25,000. Using an average of complexity costs, it would cost the Forest Service around \$7.8 million annually for 86 segments. (Estimated Costs of Wild and Scenic Rivers Program - V. 091104)

#### **SUITABILITY FACTOR ASSESSMENT:**

**(1) The extent to which the State or its political subdivisions might participate in the shared preservation and administration of the river, including costs, should it be proposed for inclusion in the National System.**

There is not known demonstrated commitment to share in the costs of administering the river as part of the National System.

**(2) The state/local government's ability to manage and protect the outstandingly remarkable values on non-federal lands. Include any local zoning and/or land use controls that appear to conflict with protection of river values.**

Several of the private ranches downstream from the forest river segment are in conservation easements. These conservation easements are designed to control population growth, enhance vegetation and water quality, and protect river related values. These easements were created prior to this process, but would likely help to protect values of the river segment. Some of the properties that are not currently under conservation easement are considering similar easements for the future.

According to Kane County Planning and Zoning Department, most the ranch properties downstream from the forest in the area are zoned for 40 acre ranches. This is called Recreation/Residential 36 and used to be called Forest Recreation 40. There are a few stray small ranch properties. The Kane County General Plan indicates, "Protection of watersheds is critical to the continued development of the county" (page 35).

**(3) Support or opposition to designation.**

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<sup>5</sup> "A substantial amount of lands in the higher elevation forest lands have been developed for recreation homes and cabins, and many are being used year-round," explains the 1999 Kane County General Plan. That plan states that the county does not intend to provide municipal level services to these areas.

The North Fork Virgin River drainage contains some historic ranch property. There seems to be a tendency in the area towards conservation of the historic landscapes.

During the public process for the Dixie and Fishlake National Forest eligibility process, public meetings were held at Ruby's Inn and in St. George, Utah. The public did not make any "support or opposition" statements during this public process. The Kane County Commission and the Forest Service did a field trip to the area on July 6, 2004. The Commission expressed concerns related to downstream private properties, potential fire in the area, and manageability of such a small segment. Additional concerns were expressed concerning whether or not the stream has flow in drought years or if it had regular flow before the Navajo Lake dike was created in the 1920s. Commissioners also suggested that access and development levels suggest that the tentative classifications should be scenic rather than wild. Overall, however, the Commissioners said that it was a place worthy of serious consideration on both eligibility and suitability grounds (notes from Field Trip).

In 2007, Senator Robert Bennett introduced land use legislation on behalf of Washington County, Utah. The legislation was not passed in 2007. It has since been updated and reintroduced. The legislation would designate the Virgin River and all its Tributaries in Zion National Park as a Wild and Scenic River. The river segment on forest lands is upstream from Zion and represents one of these tributaries. There appears to be some public support for designation by virtue of this proposed legislation. Additionally, the recently completed Kanab Field Office RMP found several additional segments upstream of the park within the Virgin River system to be suitable.

When representatives of the Forest met with staff from the Navajo Nation and Hopi Nation in July 2006, the Tribes indicated that they favored "preservation" of forest resources including Wild and Scenic Rivers. No official communications from the Tribes confirming this support have been received.

During the scoping and DEIS comment periods, the forest received many comments on North Fork Virgin River. Many people expressed interest in seeing this river segment designated. It was part of a group of rivers suggested for a positive suitability finding by a group of conservation organizations. All of the three organized campaigns supported a positive suitability finding for this segment. The Kane County Commission, Kane County Water Conservancy District, Kane County Resource Development Committee, and other oppose the suitability of this segment. Iron County and Garfield County, which are very close to this segment, are also opposed to this segment.

**(4) The consistency of designation with other agency plans, programs or policies and in meeting regional objectives.**

Downstream segments of the river have been found suitable on land managed by the National Park Service, and Bureau of Land Management.

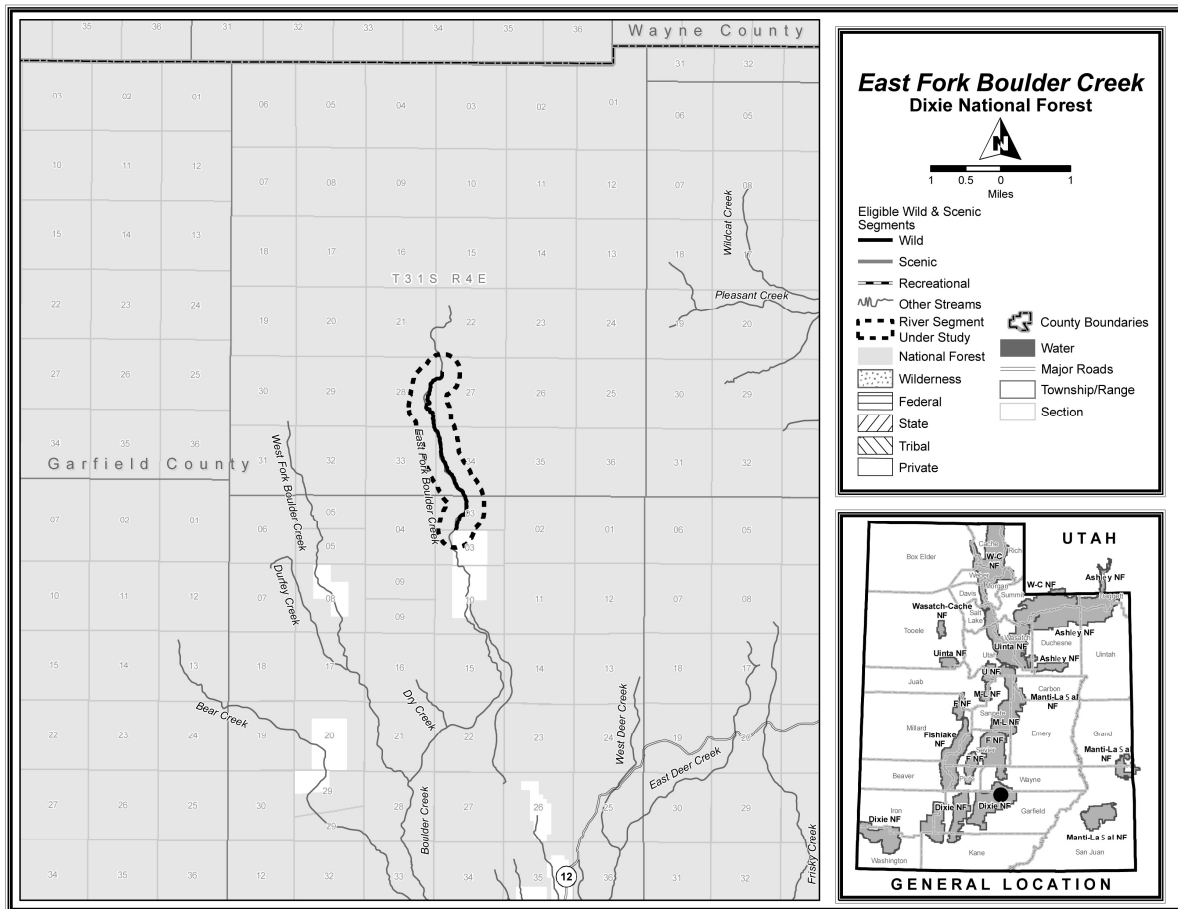
**(5) Contribution to river system or basin integrity.**

North Fork Virgin River is one of many tributaries to the Virgin River system that are located on Dixie National Forest lands. It crosses a long distance of private land before it reenters public domain. Without coordination across the private land this segment alone does not likely contribute significantly to the integrity of the Virgin River system.

**(6) Demonstrated or potential commitment for public volunteers, partnerships, and/or stewardship commitments for management and/or funding of the river segment.**

There are several homeowners associations and civic groups in the area that may have an interest in volunteer projects; however, there has not been any official written or verbal indication of interest from these potential partners.

# **East Fork Boulder Creek Suitability Evaluation Report (SER)**



## **STUDY AREA SUMMARY**

**Name of River:** East Fork Boulder Creek

**River Mileage:**

Studied: 2.8 miles, from headwaters to private property

Eligible: Same

**Location:**

East Fork Boulder Creek	Dixie National Forest, Escalante Ranger District, Garfield County, Utah		Congressional District 2	
	Start	End	Classification	Miles
Segment 1	NW ¼ NW ¼ Sect. 27, T 31 S, R 4E, SLM	SE ¼ NW ¼ Sect. 3, T 32S, R 4E, SLM	Wild	2.8

**Physical Description of River:**

The East Fork of Boulder Creek originates along the southern rim of the Aquarius Plateau known as the Boulder Top. The upper reaches of the river are dominated by wet marshy meadows highlighted by a band of aspen trees that spill off the edge of the plateau. Downstream of the plateau, the creek is a boulder dominated step-pool system through a mixed conifer forest that boasts large Engelmann Spruce and Douglas fir trees. The stream corridor supports a diverse riparian plant community and wildlife



community that includes mule deer, black bear, and large herds of Rocky Mountain elk.

## **ELIGIBILITY**

**Name and Date of Eligibility Document:** Appendix 4, Wild and Scenic River Eligibility, Grand Staircase National Monument (GSENM), 1998

**Determination of Free-flow:** There are no known diversions, impoundments, or other channel modifications of East Fork Boulder Creek on this segment.

### **Summary of Outstandingly Remarkable Values (ORV):**

**Scenic** – The East Fork of Boulder Creek is located at the base of the ledge dominated face of the Aquarius Plateau known as the Boulder Top. The upper reaches of the creek are dominated by wet marshy meadows speckled with small beaver ponds, highlighted with a band of aspen trees. The lower reaches of the creek are located in a mixed conifer forest that boasts large Engelmann Spruce and Douglas-fir trees. The scenic qualities of the creek corridor are frequently enhanced by the presence of mule deer, black bear, and large herds of Rocky Mountain elk.

**Recreational** – The East Boulder Creek Trail (#34019) provides a backcountry hiking experience and creek access as it loops the river corridor. The trail receives low to moderate amounts of use during the summer and fall months. The creek is regionally known as a highly productive Colorado River cutthroat trout and brook trout fishery. The predominant recreational uses in this area are hiking, recreational fishing and hunting.

**Fish** – The East Fork of Boulder Creek supports a self-sustaining trout fishery with Colorado River cutthroat trout and brook trout present. The upper half mile reach of the creek is inhabited exclusively by native Colorado River cutthroat trout. Natural cascades prevent upstream movement of non-native brook trout into this upper stream segment. The Colorado River cutthroat trout within the stream are a remnant population and a genetically pure population.

## **CLASSIFICATION**

**Basis for the Classification of River:** Wild

There are no roads present in the river corridor. There is access to the river corridor via a non-motorized trail.

## **SUITABILITY REPORT**

**Landownership and Land Uses** – The eligible river corridor is a 2.8 mile-long river segment and encompasses 895 acres and is entirely on National Forest System (NFS) lands administered by the Dixie National Forest.

<b>River Mile</b>	<b>Ownership</b>	<b>Acres</b>
0 – 2.8	Dixie National Forest (Escalante Ranger District)	895
	<b>Total:</b>	<b>895 acres</b>

**Mineral and Energy Resource Activities** – There are no existing salable, locatable, or leasable mineral and energy resources development in the eligible segment.

East Fork Boulder Creek is located in the Boulder Mountain/Boulder Top/Deer Lake Roadless Area. According to the Dixie National Forest Roadless Area Minerals Evaluation the potential for this area was as follows:

Mineral Potential:

Oil and Gas: Currently there are no producing wells or fields in this area. It has been only lightly explored. There are no leases but industry has expressed interest in the areas to the east and south.

Oil potential associated with four possible plays (Late Proterozoic/Cambrian, Devonian-Pennsylvanian, Late Paleozoic, and Permo-Triassic Unconformity) is ranked as moderate to high (low certainty) along the eastern and southern portions of the Teasdale and Escalante Ranger Districts. The occurrence potential is lower in this roadless area due to the occurrence of volcanic activity and occurrence of carbon dioxide gas. Development potential is ranked as low by the UGS due to the volcanic rocks, occurrence of carbon dioxide, and lack of defined targets. If leases are issued, exploratory drilling on a limited basis could occur.

This area is not prospective for natural gas/methane due to uplift and erosion of known source/reservoir Cretaceous sedimentary rocks.

Carbon Dioxide: Moderate potential for occurrence (low certainty). Development potential is low-none because there is no market.

Geothermal: Occurrence potential is unknown due to the lack of identified thermal wells and springs. Due to the lack of known geothermal springs and wells and overall information, the development potential is considered low.

Coal: There are no known coal deposits in this area

Locatable Minerals: There are no known valuable deposits of base or precious metals or other locatable minerals. Development potential is low.

Common Variety: Tertiary volcanic rocks cover nearly the entire area. Volcanic rock could be developed for riprap, decorative stone, and building stone. Development potential is considered moderate, most likely on a small scale, localized basis.

References:

Utah Geological Survey, 2004, The Oil, Gas, Coalbed Gas, Carbon Dioxide and Geothermal Resources of the Fishlake National Forest, Southwestern Utah, April 30, 2004.

Doelling, H.H., 1972. Southwestern Utah Coal Fields: Alton, Kaiparowits Plateau and Kolob-Harmony. Utah Geological and Mineralogical Survey, Monograph Series No. 1, 1972.

**Water Resources Development** – The area of study is the section of stream beginning at the Escalante Ranger District northern boundary in NW/NW Section 27, T. 31 S, R. 4 E and ending at the private property boundary in SE/NW Section 3, T. 32 S, R. 4 E. There are no known existing water developments (dams, diversions or channel modifications) on this segment. There are no historic, current, or known planned Federal Energy Regulatory Commission permits or license applications for this corridor. Designation into the Wild and Scenic river system does not affect existing, valid water rights.

**Transportation, Facilities, and Other Developments** – The East Boulder Creek Trail (#34019) provides access to the river's headwaters and loops the river corridor, within the corridor. This non-motorized trail is 6.5 miles long and receives low to moderate use. The trailhead is accessed by Forest Service Road #30165, but neither the trailhead nor the road are in the river corridor. There are no other facilities and/or other developments located in the river corridor.

**Grazing Activities** – The river segment is located within the Boulder Allotment. The Boulder Allotment consists of 89,568 acres and is an active allotment with eight permittees.

<b>Boulder Allotment</b>		
<u>Permittee Name</u>	<u>Number of mature cow/Nursing</u>	<u>Active Grazing Dates</u>
M.G. Nelson	60	06/16 to 10/15
L.J. & B.C. Gardener	70	06/16 to 10/15
A. & D. Coombs	152	06/16 to 10/15
H.D & G. Lefevre	7	06/16 to 10/15
B.K. & A.H. Roundy	80	06/16 to 10/15
G.T. Roundy	80	06/16 to 10/15
Roundy Land & Cattle Co.	371	06/16 to 10/15
G.W. Haws	223	06/16 to 10/15

**Recreation Activities** – See recreational ORV discussion above.

**Other Resource Activities** – Due to the limited access and steep terrain, other river corridor uses, such as timber harvest and farming, are not foreseeable uses.

**Special Designations** – The East Fork Boulder Creek river corridor is entirely located in the Boulder Mountain/Boulder Top/Deer Lake Roadless Area (1999 Roadless Areas). The purpose of designated roadless areas under the 1999 Road Rule was “to restrict certain activities such as road construction and reconstruction into the unroaded portions of inventoried roadless areas and to establish a process for evaluating possible limitations on activities in other uninventoried unroaded areas through forest planning at the local level.”

**Socio-Economic Environment** – The river segment is located within Garfield County. Boulder and Escalante are the two closest towns. Access to the area is provided by Highway 12 – an All-American Road.

Garfield County is a largely rural county where traditional natural resource economic endeavors have dominated historically. In recent years, there has been a growth in recreation, tourism, and services. Much of this growth in recreation and tourism can be attributed to the designation of the Grand Staircase-Escalante National Monument in 1996. The county is struggling to retain rural traditions and lifestyles as well as “working” connections with the land. In the face of rising land values and globalization, traditional industries such as farming and ranching are becoming more difficult. Second home ownership has increased in the county dramatically. Over 60% of property tax notices in Garfield County are sent out of the county (39% out of state or country). Educating these occasional land users about special values and proper use is becoming more difficult.

A recent visitor study of the Grand Staircase-Escalante National Monument indicates that approximately 600,000 people visit the area every year. While most of the visitors remain in the frontcountry visitor areas, exploration into the backcountry is increasing. Visitors come from throughout the United States and the world. About 14% of visitors are from Utah, 13% from California, 6% from Arizona, 5% from Colorado, and 10% from other western states. About 30% come from the other 39 states leaving 23% from other countries. The average visitor spends three days in the area. Only 20% of these visitors indicated that the Monument was their primary destination. Many of these visitors end up exploring the forest. The most common visitor activities reported were hiking, photography, scenic driving, and viewing natural features. Escalante and Bryce Canyon are the two most visited communities near the Monument. Boulder also experienced high visitation. The average amount spent by a group of three to

the area was just under \$500. This means that more than \$20.6 million is being directly spent in Garfield and Kane counties because of the designated Monument. This is the equivalent of more than 430 full-time jobs. (A Front Country Visitor Study for the Grand Staircase-Escalante National Monument, Utah State University, Professional Report IORT PR2006-01, April 2006).

More specifically, trends and conditions:

**Garfield County**, the fifth largest county in the state has the highest percentage of federal land (over 90%) in a county in the state of Utah.<sup>6</sup> The county contains over one million acres of National Forest System lands (including the Box-Death Hollow Wilderness Area) and large areas of other federal land, including portions of Grand Staircase-Escalante National Monument, Bryce Canyon National Park, Capitol Reef National Park, and Glen Canyon National Recreation Area. There are only about 170,000 acres of private land in the county. Public lands provide both challenges and opportunities for economic development in the county. The county is sparsely populated and is only projected to grow at a 1.0 percent rate annually between 2005 and 2050, a rate below the state average.

According to a 2003 Utah Bureau of Economic Analysis Report, Garfield County residents had one of the five lowest levels of total personal income in the state for 2003. Additionally, Garfield County had the second highest unemployment rate (10.8 percent) in the state according to 2003 Utah Department of Workforce Services information, exceeded only by Emery County's 11.0 percent unemployment rate. Slow job growth and unemployment are recurrent problems for the county. Traditionally, county residents have relied primarily upon ranching and timber. While there is a desire to retain these traditional sources of economic opportunity, services related to recreation and tourism are growing quickly in the county. Services are projected to increase from a 30.1 percent share in the Garfield County economy in 2005 to a 37.8 percent share in 2030 (State of Utah 2003).

According to Garfield County, the growth in the recreation and tourism industries has not been strong enough to provide the economic growth that has been achieved in more diverse parts of the state (Bremner 2006).<sup>7</sup> While these services (mostly related to leisure and hospitality) represent the largest sector in the Garfield County economy, government jobs (the sector ranked second) make up a much higher percentage of payroll wages (State of Utah 2003). There is a perception that leisure and hospitality jobs will not pay as much as jobs in other more traditional sectors.<sup>8</sup> According to Garfield County, "... Garfield County is struggling economically. Schools are showing declining enrollment, and additional natural resource based industries have been all but eliminated in the county. ... Garfield County is struggling and unless changes [in land management and opportunities] are made relatively soon, things will get tougher" (Bremner 2006). Also according to Garfield County Commissioner Maloy Dodds in testimony to Congress, "...most tourist-generated jobs generally are minimal skill, minimum wage jobs – not the kind that can support a family." Another important fact that the Commissioner noted, "Federal destination areas [are] a mixed blessing at best" for Garfield County because increased visitors can be a burden to the county in terms of increased cost of garbage and search and rescue operations (Testimony to

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<sup>8</sup> In the book *Visions of the Grand Staircase-Escalante* (compiled at the time of the Grand Staircase-Escalante National Monument planning process in the 1990s), Gail Blattenberger and David Kiefer acknowledge, "[m]inimum wages plus tips at Ruby's Inn are what the locals [in Garfield County] envisage from the service industry, but high tech service enterprises are also viable given an investment in communications infrastructure." Blattenberger and Kiefer suggest that while based on past performance "economic well-being" is clearly an issue in Kane and Garfield counties, "[e]xtractive industries are not an optimal or even a viable solution to the economic situation in these counties." Furthermore, "change will certainly come to these economies" and be met with "resistance (because of) the desire for a land-based economy (which is) seen as crucial to the quality of life in the rural West." According to the authors, the key is to "find ways of preserving our land-based Western heritage and lifestyle (which are so important to rural residents) along with the natural treasures of the countryside." Roughly 10 years later, we seem to face the same conditions, trends, attitudes, fears, opportunities, and challenges (Blattenberger and Kiefer 1998).

House Resources Committee's Forest and Forest Health Subcommittee, June 15, 2005).

The closest communities to the river segment are Escalante and Boulder. Escalante is projected to grow from about 800 people in 2000 to about 1300 in 2050. Boulder is projected to grow from 180 in 2000 to around 300 in 2050.

The river segment and the areas below Highway 12 are also used regularly by residents of Wayne County. Wayne County has the second highest percentage of federal land of any county in the state. The county contains about 160,000 acres of National Forest System lands. The county contains the second fewest acres of private land in the state, trailing only Daggett County (which is four times smaller than Wayne County) by about 8,000 acres. From 2004 to 2005, Wayne County was only one of three counties to register negative population growth. The county had a -0.6% growth rate (the lowest in the State) (State of Utah 2006). However, from 2005 to 2050, the county is projected to almost double in population and grows at a 1.2 percent annual growth rate (State of Utah 2005).

Education and health services are the largest sector in the Wayne County economy. This sector is buoyed by the presence of Aspen Health Services' Aspen Achievement Academy, a wilderness therapy program that is a major county employer. Headquartered in Loa, the program operates on BLM and Forest Service lands. Government is the second largest sector in the county. Since 1980 agriculture has decreased dramatically and services have increased, a trend that is projected to continue into 2030. In 1980, agriculture made up 26.9 percent of the economy, while services took only a 3.5 percent share. By 2002, agriculture had declined to 13.8 percent and services had increased to 24.9 percent. In 2030, *People and the Forests* projects that agriculture will take a 6.5 percent share, while services will have increased to 30.3 percent (State of Utah 2003). This increase is visible in the increasingly popular tourist venue of Torrey at the gateway to Capitol Reef National Park.

While agriculture continues to decline, it is an important part of the county's traditions and customs. Many county residents work multiple jobs to keep the traditions of the past alive. The Wayne County General Plan identifies tourism promotion as an important economic development tool; however, there is concern over preserving quality of life while implementing this strategy.

Wayne County continues to struggle with issues of poverty. The county's 1999 poverty rate exceeded 15 percent, almost one and one-half times the state average (State of Utah 2003). Total personal income in Wayne County is the fourth lowest in the state. Growth rates of total personal income were second to last in the state from 2000 to 2003 (Bureau of Economic Analysis 2003).

Teasdale, Grover, and Torrey are the closest towns in Wayne County to the river segment. Torrey, population 171 (2005), is not expected to grow dramatically in the next 50 years. Other communities in Wayne County (e.g., Teasdale and Grover) are not expected to grow rapidly.

**Current Administration and Funding Needs if Designated** – The current administering agency is the USFS.

The following information is based on 2001 data, which doesn't account for inflation over the past six years, but is the best available data. If a river is designated as Wild, Scenic, or Recreational, the actual cost of preparing the comprehensive river management plan would average \$200,000 per plan for 86 segments, which would cost approximately \$17.2 million the first two to three years following designation. It was estimated that annual management costs for a high complexity river would be \$200,000; a moderate complexity river would be \$50,000; and a low complexity river at \$25,000. Using an average of complexity costs, it would cost the Forest Service around \$7.8 million annually for 86 segments. (Estimated Costs of Wild and Scenic Rivers Program - V. 091104)

### **SUITABILITY FACTOR ASSESSMENT:**

**(1) The extent to which the State or its political subdivisions might participate in the shared preservation and administration of the river, including costs, should it be proposed for inclusion in the National System.**

Not applicable; all lands adjacent to river segment are managed by the Forest Service.

**(2) The state/local government's ability to manage and protect the outstandingly remarkable values on non-federal lands. Include any local zoning and/or land use controls that appear to conflict with protection of river values.**

Not applicable; all lands adjacent to river segment are managed by the Forest Service.

**(3) Support or opposition to designation.** Garfield County is working on a Resource Management Plan for all lands in the county. They have included an analysis of Wild and Scenic Rivers in their discussions. While their RMP supports the designation of Cataract Canyon (Colorado River) and the Dirty Devil River as Wild and Scenic Rivers, the county does not support the designation of East Fork Boulder Creek.

During the Dixie and Fishlake National Forests eligibility process, the county expressed repeated concern over the eligibility determinations made for this and other river segments on the Escalante Ranger District. The county does not believe that the Escalante River system is suitable because its flow is too regulated by irrigators.

When representatives of the Forest met with staff from the Navajo Nation and Hopi Nation in July 2006, the Tribes indicated that they favored "preservation" of forest resources including Wild and Scenic Rivers. No official communication from the Tribes confirming this support has been received.

During the scoping and DEIS comment periods, the forest received many comments on East Fork of Boulder Creek. Many local residents of Boulder Town and others have expressed an interest in this river segment being found suitable. However, Garfield County and others have expressed strong opposition to this segment due to concerns over competing water uses and values. None of the three organized campaigns supported a positive suitability finding for this segment.

**(4) The consistency of designation with other agency plans, programs or policies and in meeting regional objectives.**

Downstream from the Forest Service boundary, GSENM found East Fork Boulder Creek to be suitable for designation (Appendix 11, GSENM FEIS Monument Plan).

The Dixie National Forest, Glen Canyon National Recreation Area, Bryce Canyon National Park, and GSENM all worked together on eligibility for this river segment. Final determinations of suitability were reserved for individual agencies to make on their own.

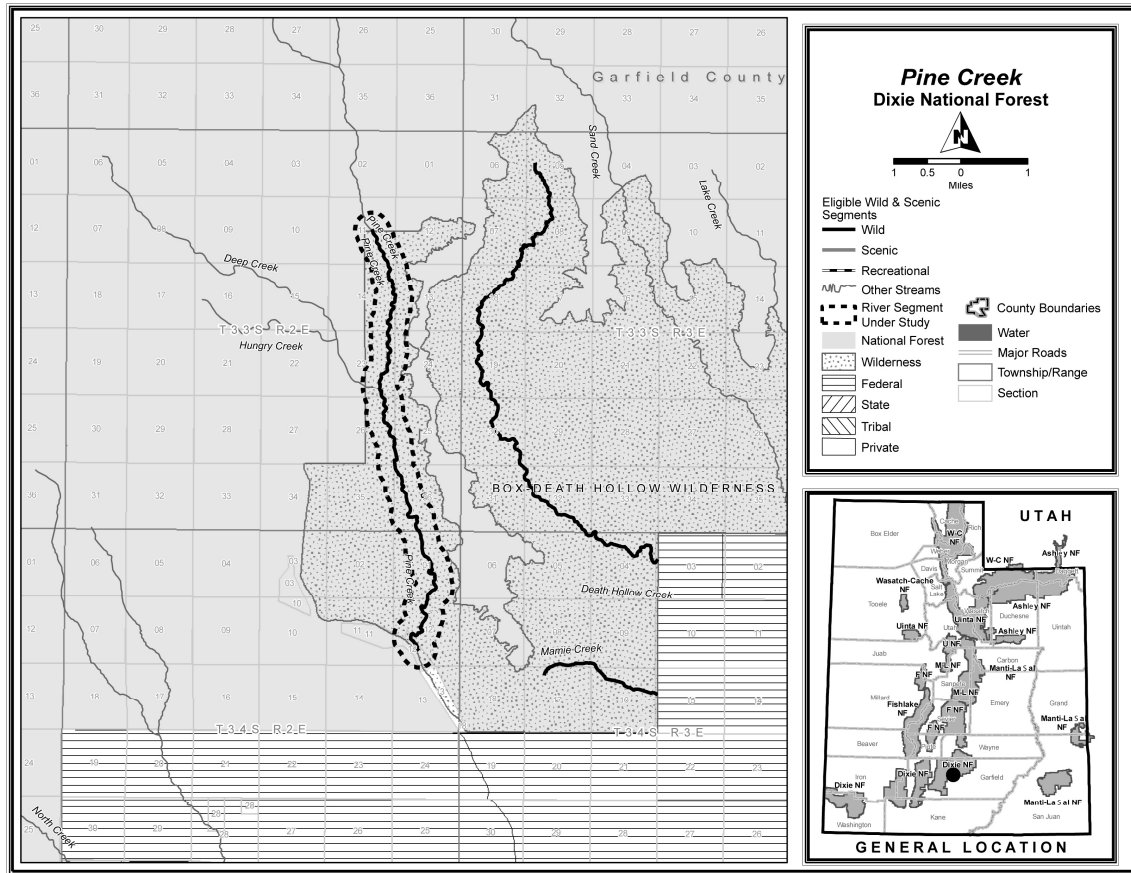
**(5) Contribution to river system or basin integrity.**

East Fork Boulder Creek is one of the tributaries identified in the GSENM plan that contributes significantly to the flow of the Escalante River. As a perennial stream it provides flow consistently to the system.

**(6) Demonstrated or potential commitment for public volunteers, partnerships, and/or stewardship commitments for management and/or funding of the river segment.**

No commitment has been expressed.

## Pine Creek Suitability Evaluation Report (SER)



### STUDY AREA SUMMARY

**Name of River:** Pine Creek

**River Mileage:**

Studied: 7.8 miles, from north wilderness boundary to south wilderness boundary

Eligible: Same

**Location:**

Pine Creek	Dixie National Forest, Escalante Ranger District, Garfield County, Utah		Congressional District 2	
	Start	End	Classification	Miles
Segment 1	SW ¼ NE ¼ Sect. 11, T 33S, R 2E, SLM	SE ¼ SW ¼ Sect. 12, T 33S, R 2E, SLM	Wild	7.8

**Physical Description of River:** Pine Creek is a small, fast running creek that flows down a narrow tree lined canyon in the Box-Death Hollow Wilderness know as “The box”. The creek is predominantly a step-pool system that carves its way through the Escalante Monocline and into Navajo Sandstone. The upper reaches of the creek are particularly scenic with steep cliffs ranging from 800 to 1200 feet tall that descend to the creek’s edge which is vegetated with large spruce and ponderosa pine trees. The creek and riparian corridor are home to a diverse community of fish and wildlife, including Colorado cutthroat, brown trout , black bear, mule deer, owls, and various canyon dwelling birds.

## **ELIGIBILITY**

**Name and Date of Eligibility Document:** Appendix 4, Wild and Scenic River Eligibility, Grand Staircase National Monument (GSENM), 1998

**Determination of Free-flow:** There are no known diversions, impoundments, or other channel modifications of Pine Creek on National Forest System lands.

### **Summary of Outstandingly Remarkable Values (ORV):**

**Scenic** – Pine Creek is a small, fast running creek that flows down a narrow tree lined canyon in the Box-Death Hollow Wilderness know as “The box”. The creek is predominantly a step-pool system that carves its way through the Escalante Monocline and into Navajo Sandstone. The upper reaches of the creek are particularly scenic with steep cliffs ranging from 800 to 1200 feet tall that descend to the creek’s edge which is vegetated with large spruce and ponderosa pine trees. The lower reaches transition into sandy benches thick with willows and ponderosa pines, but maintain the spectacular cliff walls.

**Recreational** – The Box Trail (#43009) provides river-side hiking access the entire length of the creek as it carves its way down through the Box-Death Hollow Wilderness area. The trail is approximately 7.8 miles, begins and ends on the “Hells Backbone Road” (FS Road #30153) and usually takes an entire day to hike. Although the trail is rough and requires hikers to wade through the river and navigate the slot canyon, the trail receives an average of 2 to 3 hikers per day during the summer months.

**Geological** – Pine Creek is part of the Escalante River System which is noted for colorful canyon walls composed of layers of limestone, siltstone and sandstone. The geologic record contained in these layers speaks volumes about past history of the area. Weathering and erosion have created a variety of unique features within the canyon.

**Ecological** – Pine Creek supports a self-sustaining trout fishery that is dominated by brown trout, with native Colorado River cutthroat trout also present.

## **CLASSIFICATION**

### **Basis for the Classification of River:** Wild

There are no roads present in the river corridor. There is access to the river via a non-motorized hiking trail. The river corridor is located entirely in the Box-Death Hollow Wilderness area.

## **SUITABILITY REPORT**

**Landownership and Land Uses** – The eligible river corridor is a 7.8 mile-long river segment and encompasses about 2234 acres, and is entirely on National Forest System (NFS) lands in the Box-Death Hollow Wilderness that is administered by the Dixie National Forest.

<b>River Mile</b>	<b>Ownership</b>	<b>Acres</b>
0 – 7.8	Dixie National Forest (Escalante Ranger District)	2234
	Total:	<b>2234</b>

**Mineral and Energy Resource Activities** – There is one authorized oil and gas lease within the river corridor. The lease was filed on 08/06/1976 for C02 mining in the west half of section 13. Currently there is no activity for associated with this lease. The development associated with this lease consists of a well located on Antone’s Bench, outside of the Box-Death Hollow Wilderness.

Pine Creek is located in the Box-Death Hollow Roadless Area. According to the Dixie National Forest Roadless Area Minerals Evaluation the potential for this area was as follows:

Mineral Potential:



Oil and Gas: Currently there are no producing oil or natural gas wells or fields in this area. However, Escalante Carbon Dioxide Field (Known Geologic Structure) which contains and has been developed for carbon dioxide gas lies partially within the Box-Death Hollow Wilderness Area and adjacent lands of this roadless area being evaluated. Current leases within the wilderness area that predated wilderness designation have been suspended by BLM, pending further analysis. Wells within the wilderness area are shut-in. No additional leasing can occur with the wilderness because the Utah Wilderness Act of 1983 prohibits additional leasing. The shut-in wells with prior existing rights could be developed. The adjacent areas within this roadless area are available for leasing.

Oil potential associated with four possible plays (Late Proterozoic/Cambrian, Devonian-Pennsylvanian, Late Paleozoic, and Permo-Triassic Unconformity) is ranked as moderate to high (low certainty) along the eastern and southern portions of the Teasdale and Escalante Ranger Districts. This roadless area lies within this prospective area. Petroleum development potential is ranked by the UGS as low-moderate with the highest potential relative to the Devonian-Pennsylvanian and Permo-Triassic Plays. However, this area probably has lower potential due to the volcanic activity to the north and carbon dioxide gas occurrence. Natural gas occurrence and development potential is low-none.

Carbon Dioxide: The Escalante Carbon Dioxide Known Geologic Structure lies within this area as described above. Several expressions of interest for leasing and pre-sale offers have been made in this area for additional leasing, which are currently pending. If leases are issued, additional exploratory drilling and development could occur, however there is no market for carbon dioxide within a reasonable distance of the field and there are no pipelines in the general area to connect to for transport to existing market areas. Carbon dioxide occurrence potential is high but development potential is ranked as low-moderate due to the lack of a market.

Geothermal: Occurrence potential is unknown due to the lack of identified thermal wells and springs. Due to the lack of information, the development potential is considered low.

Coal: There are known mineable coal deposits in this area.

Locatable Minerals: There are no known valuable deposits of base or precious metals or other locatable minerals. Development potential is low.

Common Variety: There are known deposits of sandstones and colluvium derived from volcanic rocks to the north. There is potential for the development of sandstone and rounded colluvium for decorative or building stone, and riprap.

#### References:

Utah Geological Survey, 2004, The Oil, Gas, Coalbed Gas, Carbon Dioxide and Geothermal Resources of the Fishlake National Forest, Southwestern Utah, April 30, 2004.

Doelling, H.H., 1972. Southwestern Utah Coal Fields: Alton, Kaiparowits Plateau and Kolob-Harmony. Utah Geological and Mineralogical Survey, Monograph Series No. 1, 1972.

**Water Resources Development** – The area of study is the stream section of Pine Creek located within the Box Death Hollow Wilderness. The section begins in the SE1/4 of Section 11, T33S, R2E and ends at the Forest/Wilderness boundary in the NW1/4 of section 13, T34S, R2E. This is also the northern boundary of a strip of private land extending to the Forest boundary. There are no historic, current, or known planned Federal Energy Regulatory Commission permits or license applications for this corridor. Designation into the Wild and Scenic river system does not affect existing, valid water rights.

**Transportation, Facilities, and Other Developments** – The Box Trail (#34009) provides access to the river and is located in the river corridor. This non-motorized trail is 7.8 miles long and receives low to moderate use. The trail is a low-level class 2 trail.

There are no roads within the river corridor.

There is a cattle fence at both the top and bottom of the river that exist within the river corridor.  
There are no other facilities and/or other developments located in the river corridor.

**Grazing Activities** – The river segment is located within the Pine Creek Allotment. The Pine Creek Allotment consists of 49,660 acres and is an active allotment with one permittee. Although the river corridor is within the allotment, there is no grazing within the Box-Death Hollow Wilderness and therefore no grazing on the riverbanks.

Oak Creek Allotment		
<u>Permittee Name</u>	<u>Number of mature cow/Nursing</u>	<u>Active Grazing Dates</u>
S.D.Sorensen	254	06/01 to 09/30

**Recreation Activities** – Recreational use of Pine Creek is considered low to moderate. The Box Trail (#43009) provides river-side hiking access the entire length of the river as it carves its way down through the Box-Death Hollow Wilderness area. The trail is approximately 7.8 miles, begins and ends on the “Hells Backbone Road” (FS Road #30153) and usually takes an entire day to hike. Although the trail is rough and requires hikers to wade through the river, the trail receives an average of 2 to 3 hikers per day during the summer months. The steep winding canyon provides solitude and a primitive experience.

**Other Resource Activities** – Due to the limited access, steep terrain, and designated wilderness status other river corridor uses, such as timber harvest and farming, are not foreseeable uses.

**Special Designations** – The Pine Creek river corridor is entirely located in the Box-Death Hollow Roadless Area (1999 Roadless Areas). The purpose of designated roadless areas under the 1999 Road Rule was “to restrict certain activities such as road construction and reconstruction into the unroaded portions of inventoried roadless areas and to establish a process for evaluating possible limitations on activities in other uninventoried unroaded areas through forest planning at the local level.”

The river corridor is also entirely located within the Box-Death Hollow Wilderness area. This area was designated in 1984 under the Utah Wilderness Act. The purpose of the wilderness designation was to ensure this area was free from modern human control or manipulation, was undeveloped and natural, and provides outstanding opportunities for solitude and a primitive and unconfined type of recreation.

**Socio-Economic Environment** – The river segment is located within Garfield County. Boulder and Escalante are the two closest towns. Access to the area is provided by Highway 12 – an All-American Road. Cottonwood Canyon flows from the Dixie National Forest onto the Grand Staircase-Escalante National Monument.

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More specifically, trends and conditions:

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**Current Administration and Funding Needs if Designated** – The current administering agency is the USFS. The U.S. Forest Service and BLM would share management of the segment.

The following information is based on 2001 data, which doesn’t account for inflation over the past six years, but is the best available data. If a river is designated as Wild, Scenic, or Recreational, the actual cost of preparing the comprehensive river management plan would average \$200,000 per plan for 86 segments, which would cost approximately \$17.2 million the first two to three years following designation. It was estimated that annual management costs for a high complexity river would be \$200,000; a moderate complexity river would be \$50,000; and a low complexity river at \$25,000. Using

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**SUITABILITY FACTOR ASSESSMENT:**

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During the Dixie and Fishlake National Forests eligibility process, the county expressed repeated concern over the eligibility determinations made for this and other river segments on the Escalante Ranger District. The county does not believe that the Escalante River system is suitable because its flow is too regulated by irrigators.

When representatives of the Forest met with staff from the Navajo Nation and Hopi Nation in July 2006, the Tribes indicated that they favored "preservation" of forest resources including Wild and Scenic Rivers. No official communications from the Tribes confirming this support have been received.

During the scoping and DEIS comment periods, the forest received comments on Pine Creek. Some people expressed interest in seeing this river segment designated. Garfield County is opposed to designation. Opposition doesn't appear to be as strong given that the segment is already protected by Wilderness designation. Many have questioned whether the additional protections available under wild and scenic rivers designation are necessary to protect the river segment. None of the three organized campaigns supported a positive suitability finding for this segment.

**(4) The consistency of designation with other agency plans, programs or policies and in meeting regional objectives.**

Downstream from the Forest Service boundary, GSENM found the Escalante River from its confluence with Pine Creek to be suitable for designation (Appendix 11, GSENM FEIS Monument Plan).

The Dixie National Forest, Glen Canyon National Recreation Area, Bryce Canyon National Park, and GSENM all worked together on eligibility for this river segment. Final determinations of suitability were reserved for individual agencies to make on their own.

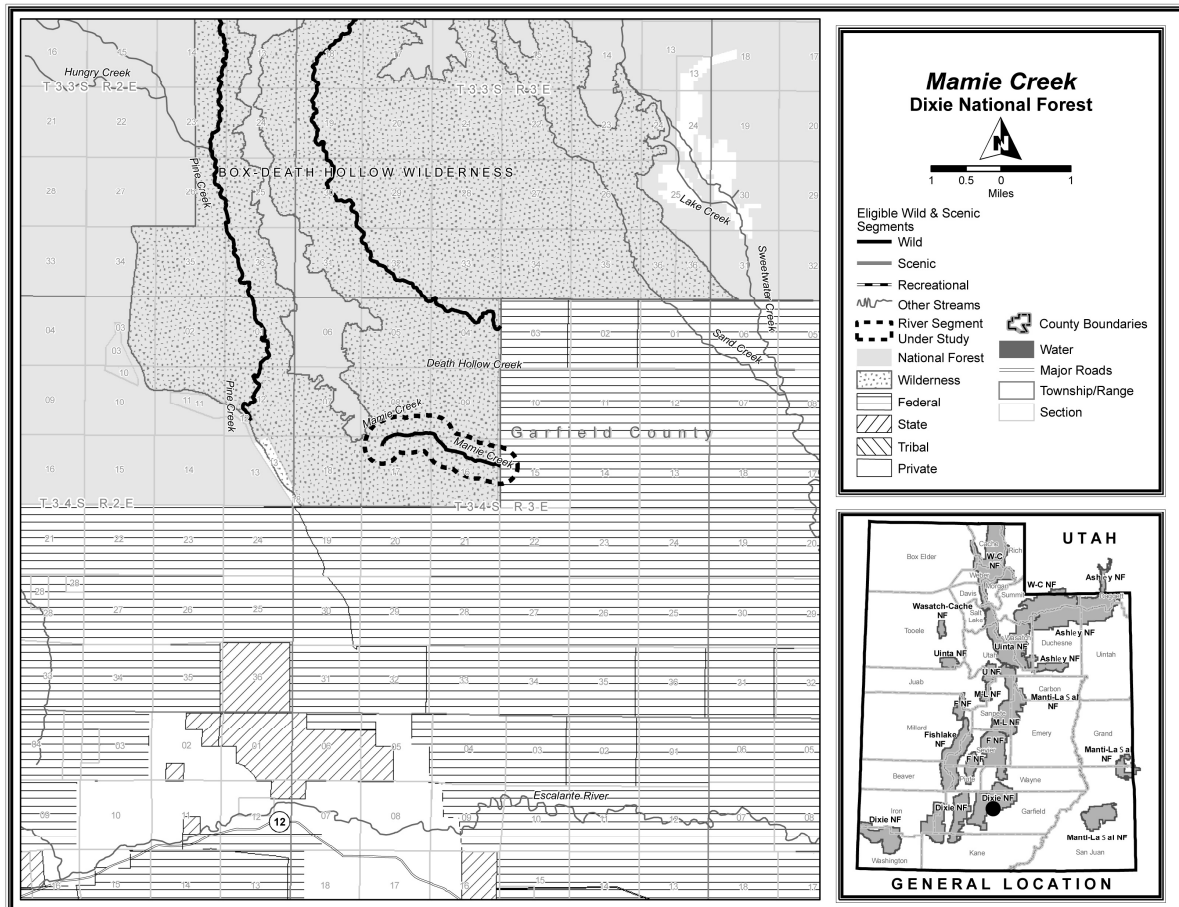
**(5) Contribution to river system or basin integrity.**

Pine Creek is one of the tributaries identified in the GSENM plan that contributes significantly to the flow of the Escalante River. As a perennial stream it provides flow consistently to the system.

**(6) Demonstrated or potential commitment for public volunteers, partnerships, and/or stewardship commitments for management and/or funding of the river segment.**

No commitment has been expressed.

# Mamie Creek Suitability Evaluation Report (SER)



## STUDY AREA SUMMARY

**Name of River:** Mamie Creek

**River Mileage:**

Studied: 11.2 miles, from headwaters to Escalante River

Eligible: 2.0 miles, from the headwaters to the forest boundary (Box-Death Hollow Wilderness Boundary)

**Location:**

Mamie Creek	Dixie National Forest, Escalante Ranger District, Garfield County, Utah		Congressional District 2	
	Start	End	Classification	Miles
Segment 1	SE ¼ NW ¼ Sect. 17, T 34S, R 3E, SLM	NE ¼ NE ¼ Sect. 16, T 34S, R 3E, SLM	Wild	2.0

**Physical Description of River:** Mamie Creek is a small creek that runs through a scenic canyon in the Box-Death Hollow Wilderness. Mamie Creek is located in open ponderous pine stand with a Manzanita understory. The river typically is ephemeral with flows typically occurring December through May, and following localized late summer thunderstorms. The river flows through the Escalante Monocline and into Navajo Sandstone where the canyon narrows into a slot canyon and slickrock as it leaves the forest.

## **ELIGIBILITY**

**Name and Date of Eligibility Document:** Appendix 4, Wild and Scenic River Eligibility, Grand Staircase National Monument (GSENM), 1998

**Determination of Free-flow:** There are no known diversions, impoundments, or other channel modifications of Mamie Creek on National Forest System lands.

### **Summary of Outstandingly Remarkable Values (ORVs):**

**Scenic** – Mamie Creek provides unique scenic views as it carves through the Navajo Sandstone. A geological mixture of shapes, textures, and colors that are complimented by waterfalls and scenic pools creates the unique scenic value.

**Recreational** – There are no Forest Service system trails that access the river, but the river itself is used as a route to access the river as it carves its way down through the Box-Death Hollow Wilderness area. The route receives very low use and is primarily use by hikers hiking up from Death Hollow while attempting to travel the brutal 3 to 4 day trip to the Escalante River. This route requires swimming, rock climbing, and advanced navigation skills. The lower half of the drainage is managed by the Grand Staircase-Escalante National Monument.

**Geological, Ecological, Fish, Wildlife, Cultural, Historic** – During the interagency process (between the Dixie National Forest, Grand Staircase-Escalante N.M., and Glen Canyon NRA), eligible river segments were identified across agency boundaries. ORVs were determined across the interagency segments. At the beginning of this Forest Service Utah Statewide Suitability project, the Forest Service revalidated the presence of individual ORVs on these river segments. Some ORVs were present on lands administered by other agencies (e.g., downstream on GSENM), but not found on the Forest Service administered segment. The ecological, cultural, wildlife, fish and geological ORVs identified in the interagency report is not found to be regionally significant on the Forest Service portions of the segment

## **CLASSIFICATION**

### **Basis for the Classification of River:** Wild

There are no roads present in the river corridor. There are no Forest Service system trails that access the river. The river corridor is located entirely in the Box-Death Hollow Wilderness area.

## **SUITABILITY REPORT**

**Landownership and Land Uses** – The eligible river corridor is a 2 mile-long river segment and encompasses about 697 acres, and is entirely on National Forest System (NFS) lands in the Box-Death Hollow Wilderness that is administered by the Dixie National Forest.

<b>River Mile</b>	<b>Ownership</b>
0 – 2	Dixie National Forest (Escalante Ranger District)

**Mineral and Energy Resource Activities** – There are two suspended authorized oil and gas lease within the river corridor. The leases were filed in 1968 by D. Rowell for C02 mining at T 34S, R 3E, Section 9 and Section 16. Currently there is no activity or development associated with this lease.

Mamie Creek is located in the Box-Death Hollow Roadless Area. According to the Dixie National Forest Roadless Area Minerals Evaluation the potential for this area was as follows:  
Mineral Potential:

Oil and Gas: Currently there are no producing oil or natural gas wells or fields in this area. However, Escalante Carbon Dioxide Field (Known Geologic Structure) which contains and has been developed for carbon dioxide gas lies partially within the Box-Death Hollow Wilderness Area and adjacent lands of this roadless area being evaluated. Current leases within the wilderness area that predated wilderness designation have been suspended by BLM, pending further analysis. Wells within the wilderness area are shut-in. No additional leasing can occur with the wilderness because the Utah Wilderness Act of 1983 prohibits additional leasing. The shut-in wells with prior existing rights could be developed. The adjacent areas within this roadless area are available for leasing.

Oil potential associated with four possible plays (Late Proterozoic/Cambrian, Devonian-Pennsylvanian, Late Paleozoic, and Permo-Triassic Unconformity) is ranked as moderate to high (low certainty) along the eastern and southern portions of the Teasdale and Escalante Ranger Districts. This roadless area lies within this prospective area. Petroleum development potential is ranked by the UGS as low-moderate with the highest potential relative to the Devonian-Pennsylvanian and Permo-Triassic Plays. However, this area probably has lower potential due to the volcanic activity to the north and carbon dioxide gas occurrence. Natural gas occurrence and development potential is low-none.

Carbon Dioxide: The Escalante Carbon Dioxide Known Geologic Structure lies within this area as described above. Several expressions of interest for leasing and pre-sale offers have been made in this area for additional leasing, which are currently pending. If leases are issued, additional exploratory drilling and development could occur, however there is no market for carbon dioxide within a reasonable distance of the field and there are no pipelines in the general area to connect to for transport to existing market areas. Carbon dioxide occurrence potential is high but development potential is ranked as low-moderate due to the lack of a market.

Geothermal: Occurrence potential is unknown due to the lack of identified thermal wells and springs. Due to the lack of information, the development potential is considered low.

Coal: There are known mineable coal deposits in this area.

Locatable Minerals: There are no known valuable deposits of base or precious metals or other locatable minerals. Development potential is low.

Common Variety: There are known deposits of sandstones and colluvium derived from volcanic rocks to the north. There is potential for the development of sandstone and rounded colluvium for decorative or building stone, and riprap.

#### References:

Utah Geological Survey, 2004, The Oil, Gas, Coalbed Gas, Carbon Dioxide and Geothermal Resources of the Fishlake National Forest, Southwestern Utah, April 30, 2004.

Doelling, H.H., 1972. Southwestern Utah Coal Fields: Alton, Kaiparowits Plateau and Kolob-Harmony. Utah Geological and Mineralogical Survey, Monograph Series No. 1, 1972.

**Water Resources Development** – There are no dams, diversions, or other channel modifications on this segment. Designation into the Wild and Scenic river system does not affect existing, valid water rights.

**Transportation, Facilities, and Other Developments** – There are no roads, trails, other facilities and/or other developments located in the river corridor.

**Grazing Activities** – The river segment is not located within any grazing allotment, therefore there is no grazing activities or development related to grazing.



**Recreation Activities** – There are no Forest Service system trails that access the river and most of the recreational use of the river corridor is from hikers traveling up the river from where it joins Death Hollow Creek. The area is very remote and access is difficult.

**Other Resource Activities** – Due to the limited access, steep terrain, and designated wilderness status other river corridor uses, such as timber harvest and farming, are not foreseeable uses.

**Special Designations** – The Mamie Creek river corridor is entirely located in the Box-Death Hollow Roadless Area (1999 Roadless Areas). The purpose of designated roadless areas under the 1999 Road Rule was “to restrict certain activities such as road construction and reconstruction into the unroaded portions of inventoried roadless areas and to establish a process for evaluating possible limitations on activities in other uninventoried unroaded areas through forest planning at the local level.”

The river corridor is also entirely located within the Box-Death Hollow Wilderness area. This area was designated in 1984 under the Utah Wilderness Act. The purpose of the wilderness designation was to ensure this area was free from modern human control or manipulation, was undeveloped and natural, and provides outstanding opportunities for solitude and a primitive and unconfined type of recreation.

**Socio-Economic Environment** – The river segment is located within Garfield County. Boulder and Escalante are the two closest towns. Access to the area is provided by Highway 12 – an All-American Road.

Garfield County is a largely rural county where traditional natural resource economic endeavors have dominated historically. In recent years, there has been a growth in recreation, tourism, and services. Much of this growth in recreation and tourism can be attributed to the designation of the Grand Staircase-Escalante National Monument in 1996. The county is struggling to retain rural traditions and lifestyles as well as “working” connections with the land. In the face of rising land values and globalization, traditional industries such as farming and ranching are becoming more difficult. Second home ownership has increased in the county dramatically. Over 60% of property tax notices in Garfield County are sent out of the county (39% out of state or country). Educating these occasional land users about special values and proper use is becoming more difficult.

A recent visitor study of the Grand Staircase-Escalante National Monument indicates that approximately 600,000 people visit the area every year. While most of the visitors remain in the Front Country visitor areas, exploration into the backcountry is increasing. Visitors come from throughout the United States and the world. About 14% of visitors are from Utah, 13% from California, 6% from Arizona, 5% from Colorado, and 10% from other western states. About 30% come from the other 39 states leaving 23% from other countries. The average visitor spends three days in the area. Only 20% of these visitors indicated that the Monument was their primary destination. Many of these visitors end up exploring the forest. The most common visitor activities reported were hiking, photography, scenic driving, and viewing natural features. Escalante and Bryce Canyon are the two most visited communities near the Monument. Boulder also experienced high visitation. The average amount spent by a group of three to the area was just under \$500. This means that more than \$20.6 million is being directly spent in Garfield and Kane counties because of the designated Monument. This is the equivalent of more than 430 full-time jobs. (A Front Country Visitor Study for the Grand Staircase-Escalante National Monument, Utah State University, Professional Report IORT PR2006-01, April 2006).

More specifically, trends and conditions:

**Garfield County**, the fifth largest county in the state has the highest percentage of federal land (over

90%) in a county in the state of Utah.<sup>12</sup> The county contains over one million acres of National Forest System lands (including the Box-Death Hollow Wilderness Area) and large areas of other federal land, including portions of Grand Staircase-Escalante National Monument, Bryce Canyon National Park, Capitol Reef National Park, and Glen Canyon National Recreation Area. There are only about 170,000 acres of private land in the county. Public lands provide both challenges and opportunities for economic development in the county. The county is sparsely populated and is only projected to grow at a 1.0 percent rate annually between 2005 and 2050, a rate below the state average.

According to a 2003 Utah Bureau of Economic Analysis Report, Garfield County residents had one of the five lowest levels of total personal income in the state for 2003. Additionally, Garfield County had the second highest unemployment rate (10.8 percent) in the state according to 2003 Utah Department of Workforce Services information, exceeded only by Emery County's 11.0 percent unemployment rate. Slow job growth and unemployment are recurrent problems for the county. Traditionally, county residents have relied primarily upon ranching and timber. While there is a desire to retain these traditional sources of economic opportunity, services related to recreation and tourism are growing quickly in the county. Services are projected to increase from a 30.1 percent share in the Garfield County economy in 2005 to a 37.8 percent share in 2030 (State of Utah 2003).

According to Garfield County, the growth in the recreation and tourism industries has not been strong enough to provide the economic growth that has been achieved in more diverse parts of the state (Bremner 2006).<sup>13</sup> While these services (mostly related to leisure and hospitality) represent the largest sector in the Garfield County economy, government jobs (the sector ranked second) make up a much higher percentage of payroll wages (State of Utah 2003). There is a perception that leisure and hospitality jobs will not pay as much as jobs in other more traditional sectors.<sup>14</sup> According to Garfield County, "... Garfield County is struggling economically. Schools are showing declining enrollment, and additional natural resource based industries have been all but eliminated in the county. . . Garfield County is struggling and unless changes [in land management and opportunities] are made relatively soon, things will get tougher" (Bremner 2006). Also according to Garfield County Commissioner Maloy Dodds in testimony to Congress, "...most tourist-generated jobs generally are minimal skill, minimum wage jobs – not the kind that can support a family." Another important fact that the Commissioner noted, "Federal destination areas [are] a mixed blessing at best" for Garfield County because increased visitors can be a burden to the county in terms of increased cost of garbage and search and rescue operations (Testimony to House Resources Committee's Forest and Forest Health Subcommittee, June 15, 2005).

The closest communities to the river segment are Escalante and Boulder. Escalante is projected to grow from about 800 people in 2000 to about 1300 in 2050. Boulder is projected to grow from 180 in 2000 to around 300 in 2050.

The river segment and the areas below Highway 12 are also used regularly by residents of Wayne County. Wayne County has the second highest percentage of federal land of any county in the state. The county

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<sup>14</sup> In the book *Visions of the Grand Staircase-Escalante* (compiled at the time of the Grand Staircase-Escalante National Monument planning process in the 1990s), Gail Blattenberger and David Kiefer acknowledge, "[m]inimum wages plus tips at Ruby's Inn are what the locals [in Garfield County] envisage from the service industry, but high tech service enterprises are also viable given an investment in communications infrastructure." Blattenberger and Kiefer suggest that while based on past performance "economic well-being" is clearly an issue in Kane and Garfield counties, "[e]xtractive industries are not an optimal or even a viable solution to the economic situation in these counties." Furthermore, "change will certainly come to these economies" and be met with "resistance (because of) the desire for a land-based economy (which is) seen as crucial to the quality of life in the rural West." According to the authors, the key is to "find ways of preserving our land-based Western heritage and lifestyle (which are so important to rural residents) along with the natural treasures of the countryside." Roughly 10 years later, we seem to face the same conditions, trends, attitudes, fears, opportunities, and challenges (Blattenberger and Kiefer 1998).

contains about 160,000 acres of National Forest System lands. The county contains the second fewest acres of private land in the state, trailing only Daggett County (which is four times smaller than Wayne County) by about 8,000 acres. From 2004 to 2005, Wayne County was only one of three counties to register negative population growth. The county had a -0.6% annual growth rate (the lowest in the State) (State of Utah 2006). However, from 2005 to 2050, the county is projected to almost double in population and grow at a 1.2 percent annual growth rate (State of Utah 2005).

Education and health services is the largest sector in the Wayne County economy. This sector is buoyed by the presence of Aspen Health Services' Aspen Achievement Academy, a wilderness therapy program that is a major county employer. Headquartered in Loa, the program operates on BLM and Forest Service lands. Government is the second largest sector in the county. Since 1980 agriculture has decreased dramatically and services have increased, a trend that is projected to continue into 2030. In 1980, agriculture made up 26.9 percent of the economy, while services took only a 3.5 percent share. By 2002, agriculture had declined to 13.8 percent and services had increased to 24.9 percent. In 2030, *People and the Forests* projects that agriculture will take a 6.5 percent share, while services will have increased to 30.3 percent (State of Utah 2003). This increase is visible in the increasingly popular tourist venue of Torrey at the gateway to Capitol Reef National Park.

While agriculture continues to decline, it is an important part of the county's traditions and customs. Many county residents work multiple jobs to keep the traditions of the past alive. The Wayne County General Plan identifies tourism promotion as an important economic development tool; however, there is concern over preserving quality of life while implementing this strategy.

Wayne County continues to struggle with issues of poverty. The county's 1999 poverty rate exceeded 15 percent, almost one and one-half times the state average (State of Utah 2003). Total personal income in Wayne County is the fourth lowest in the state. Growth rates of total personal income were second to last in the state from 2000 to 2003 (Bureau of Economic Analysis 2003).

Teasdale, Grover, and Torrey are the closest towns in Wayne County to the river segment. Torrey, population 171 (2005), is not expected to grow dramatically in the next 50 years. Other communities in Wayne County (e.g., Teasdale and Grover) are not expected to grow rapidly.

**Current Administration and Funding Needs if Designated** – The current administering agency is the USFS. U.S. Forest Service and BLM would share management of the segment.

The following information is based on 2001 data, which doesn't account for inflation over the past six years, but is the best available data. If a river is designated as Wild, Scenic, or Recreational, the actual cost of preparing the comprehensive river management plan would average \$200,000 per plan for 86 segments, which would cost approximately \$17.2 million the first two to three years following designation. It was estimated that annual management costs for a high complexity river would be \$200,000; a moderate complexity river would be \$50,000; and a low complexity river at \$25,000. Using an average of complexity costs, it would cost the Forest Service around \$7.8 million annually for 86 segments. (Estimated Costs of Wild and Scenic Rivers Program - V. 091104)

#### **SUITABILITY FACTOR ASSESSMENT:**

**(1) The extent to which the State or its political subdivisions might participate in the shared preservation and administration of the river, including costs, should it be proposed for inclusion in the National System.**

Not applicable as the segment is entirely on land managed by the Forest Service.

**(2) The state/local government's ability to manage and protect the outstandingly remarkable values on non-federal lands. Include any local zoning and/or land use controls that appear to conflict with**

**protection of river values.**

Not applicable as the segment is entirely on land managed by the Forest Service.

**(3) Support or opposition to designation.**

Garfield County is working on a Resource Management Plan for all lands in the county. They have included an analysis of Wild and Scenic Rivers in their discussions. While their RMP supports the designation of Cataract Canyon (Colorado River) and the Dirty Devil River as Wild and Scenic Rivers, the county does not support the designation of Mamie Creek.

During the Dixie and Fishlake National Forests eligibility process, the county expressed repeated concern over the eligibility determinations made for this and other river segments on the Escalante Ranger District. The county does not believe that the Escalante River system is suitable because its flow is too regulated by irrigators.

When representatives of the Forest met with staff from the Navajo Nation and Hopi Nation in July 2006, the Tribes indicated that they favored “preservation” of forest resources including Wild and Scenic Rivers. No official communications from the Tribes confirming this support has been received.

During the scoping and DEIS comment periods, the forest did not receive many comments in support or opposition to the suitability of this river segment. Garfield County expressed some opposition. Opposition from these entities doesn’t appear to be as strong given that the segment is already protected by Wilderness designation. Many have questioned whether the additional protections available under wild and scenic rivers designation are necessary to protect the river segment. None of the three organized campaigns supported a positive suitability finding for this segment.

**(4) The consistency of designation with other agency plans, programs or policies and in meeting regional objectives.**

Downstream from the Forest Service boundary, GSENM found Mamie Creek on BLM lands below the forest boundary to be suitable for designation because of “high scenic quality, part of an ONA, high recreational use, natural bridge, fish and wildlife habitat, prehistoric and historic sites including an historic mail trail, and riparian areas” (Appendix 11, GSENM FEIS Monument Plan).

The Dixie National Forest, Glen Canyon National Recreation Area, Bryce Canyon National Park, and GSENM all worked together on eligibility for this river segment. Final determinations of suitability were reserved for individual agencies to make on their own.

**(5) Contribution to river system or basin integrity.**

Mamie Creek was not noted by the GSENM as one of the Escalante River tributaries that contributes significantly to the flow of the Escalante River.

**(6) Demonstrated or potential commitment for public volunteers, partnerships, and/or stewardship commitments for management and/or funding of the river segment.**

No commitment has been expressed.

**Death Hollow Creek**  
Dixie National Forest

Garfield County

Box-Death Hollow Wilderness

Death Hollow Creek

Mamie Creek

Map Legend:

- Eligible Wild & Scenic Segments
  - Wild
  - Scenic
  - Recreational
  - Other Streams
  - River Segment Under Study
- County Boundaries
- National Forest
- Wilderness
- Federal
- State
- Tribal
- Private
- Water
- Major Roads
- Township/Range
- Section

Scale: 1 0.5 0 1 Miles

General Location Map of Utah showing various National Forests and the location of Death Hollow Creek in Garfield County.

**Name of River:** Death Hollow Creek

Studied: 19.5 miles, from headwaters to Mamie Creek

**Location:**

Death Hollow Creek	Dixie National Forest, Escalante Ranger District, Garfield County, Utah		Congressional District 2	
	Start	End	Classification	Miles
Segment 1	SW ¼ NW ¼ Sect. 15, T 33S. R 3E. SLM	SE ¼ NE ¼ Sect. 4, T 34S. R 3E. SLM	Wild	9.6

Death Hollow Creek is a small creek that runs down a broad canyon in the Box-Death Hollow Wilderness know as “Death Hollow”. The upper headwaters of Death Hollow Creek are located in open ponderosa pine stand with a manzanita understory that is surrounded by thousand foot cliffs. The upper reach of the river typically is ephemeral with flows typically occurring December through May, and following localized late summer thunderstorms. The lower reaches of the river flow through the Escalante

Monocline and into Navajo Sandstone where the canyon narrows into a slot canyon and slickrock pocket catch and hold water year-round.

## **ELIGIBILITY**

**Name and Date of Eligibility Document:** Appendix 4, Wild and Scenic River Eligibility, Grand Staircase National Monument, 1998

**Determination of Free-flow:** There are no known diversions, impoundments, or other channel modifications of Death Hollow Creek on National Forest System lands.

### **Summary of Outstandingly Remarkable Values:**

**Scenic** – Death Hollow Creek is a small creek that runs down a broad canyon in the Box-Death Hollow Wilderness known as “Death Hollow”. The upper headwaters of Death Hollow Creek are located in open ponderous pine stand with a manzanita understory that is surrounded by thousand foot cliffs. The upper reach of the river typically is ephemeral with flows typically occurring December through May, and following localized late summer thunderstorms. The lower reaches of the river flow through the Escalante Monocline and into Navajo Sandstone where the canyon narrows into a slot canyon and slickrock pocket catch and hold water year-round.

**Recreational** – There are no Forest Service system trails that access the river, but there is a route that is used to access the river as it carves its way down through the Box-Death Hollow Wilderness area. The access route starts on the “Hells Backbone Road” (FS Road #30153) and steeply descends down a rocky rough route. This access point acts as the only way to enter or leave the drainage without hiking 20 or more miles. The route receives very low use and is primarily used by hikers attempting to travel the brutal 3 to 4 day trip to the Escalante River. This route requires swimming, rock climbing, and advanced navigation skills. The lower half of the drainage is managed by the Grand Staircase-Escalante National Monument.

**Ecological, cultural, wildlife, and paleontological** – During the interagency process (between the Dixie National Forest, Grand Staircase-Escalante N.M., and Glen Canyon NRA), eligible river segments were identified across agency boundaries. ORVs were determined across the interagency segments. At the beginning of this Forest Service Utah Statewide Suitability project, the Forest Service revalidated the presence of individual ORVs on these river segments. Some ORVs were present on lands administered by other agencies (e.g., downstream on GSENM), but not found on the Forest Service administered segment. The ecological, cultural, wildlife, and paleontological ORVs identified in the interagency report is not found to be regionally significant on the Forest Service portions of the segment.

## **CLASSIFICATION**

**Basis for the Classification of River:** Wild

There are no roads present in the river corridor. There are no Forest Service system trails that access the river. The river corridor is located entirely in the Box-Death Hollow Wilderness area.

## **SUITABILITY REPORT**

**Landownership and Land Uses** – The eligible river corridor is a 9.6 mile-long river segment that encompasses about 2801 acres, and is entirely on National Forest System (NFS) lands in the Box-Death Hollow Wilderness, administered by the Dixie National Forest.

River Mile	Ownership	Acres
0 – 9.6	Dixie National Forest (Escalante Ranger District)	2801

**Mineral and Energy Resource Activities** – There are two suspended authorized oil and gas lease within the river corridor. The leases were filed in 1968 by D. Rowell for CO<sub>2</sub> mining at T 34S, R 3E, Section 4 and Section 6. Currently there is no activity or development associated with this lease.

Death Hollow Creek is located in the Box-Death Hollow Roadless Area. According to the Dixie National Forest Roadless Area Minerals Evaluation the potential for this area is as follows:

**Mineral Potential:**

**Oil and Gas:** Currently there are no producing oil or natural gas wells or fields in this area. However, Escalante Carbon Dioxide Field (Known Geologic Structure)—which contains and has been developed for carbon dioxide gas—lies partially within the Box-Death Hollow Wilderness Area and adjacent lands of this roadless area are being evaluated. Current leases within the wilderness area that predated wilderness designation have been suspended by BLM, pending further analysis. Wells within the wilderness area are shut-in. No additional leasing can occur with the wilderness because the Utah Wilderness Act of 1983 prohibits additional leasing. The shut-in wells with prior existing rights could be developed. The adjacent areas within this roadless area are available for leasing.

Oil potential associated with four possible plays (Late Proterozoic/Cambrian, Devonian-Pennsylvanian, Late Paleozoic, and Permo-Triassic Unconformity) is ranked as moderate to high (low certainty) along the eastern and southern portions of the Teasdale and Escalante Ranger Districts. This roadless area lies within this prospective area. Petroleum development potential is ranked by the UGS as low-moderate with the highest potential relative to the Devonian-Pennsylvanian and Permo-Triassic Plays. However, this area probably has lower potential due to the volcanic activity to the north and carbon dioxide gas occurrence. Natural gas occurrence and development potential is low-none.

**Carbon Dioxide:** The Escalante Carbon Dioxide Known Geologic Structure lies within this area as described above. Several expressions of interest for leasing and pre-sale offers have been made in this area for additional leasing, which are currently pending. If leases are issued, additional exploratory drilling and development could occur, however there is no market for carbon dioxide within a reasonable distance of the field and there are no pipelines in the general area to connect to for transport to existing market areas. Carbon dioxide occurrence potential is high but development potential is ranked as low-moderate due to the lack of a market.

**Geothermal:** Occurrence potential is unknown due to the lack of identified thermal wells and springs. Due to the lack of information, the development potential is considered low.

**Coal:** There are known mineable coal deposits in this area.

**Locatable Minerals:** There are no known valuable deposits of base or precious metals or other locatable minerals. Development potential is low.

**Common Variety:** There are known deposits of sandstones and colluvium derived from volcanic rocks to the north. There is potential for the development of sandstone and rounded colluvium for decorative or building stone, and riprap.

**References:**

Utah Geological Survey, 2004, The Oil, Gas, Coalbed Gas, Carbon Dioxide and Geothermal Resources of the Fishlake National Forest, Southwestern Utah, April 30, 2004.

Doelling, H.H., 1972. Southwestern Utah Coal Fields: Alton, Kaiparowits Plateau and Kolob-Harmony. Utah Geological and Mineralogical Survey, Monograph Series No. 1, 1972.

**Water Resources Development** – The study area is the stream section of Death Hollow Creek located within the Box Death Hollow Wilderness. The section begins at the Wilderness boundary in NWNE Section 6, T33S, R3E and ends at the Forest/Wilderness boundary in SENE Section 4, T34S, R3E.

According to the Utah State Division of Water Rights database, the only claim directly on Death Hollow Creek belongs to the Forest Service (97-540), claiming the portion of the stream in Section 4, T34S, R3E to the Forest boundary for stock watering. The BLM claims the portion of the stream just outside the boundary in Section 3, T34S, R3E (97-791).

There are no other claims within the Death Hollow and Right Fork Death Hollow sections of the Wilderness. There are two tributaries that appear to be the headwaters of Death Hollow Creek, but these are north of the Wilderness near Roger Peak, and the only claims within two miles of the tributaries belong to the Forest Service. Designation into the Wild and Scenic river system does not affect existing, valid water rights.

**Transportation, Facilities, and Other Developments** – There are no roads, trails, other facilities and/or other developments located in the river corridor.

**Grazing Activities** – The river segment is not located within any grazing allotment, therefore there is no grazing activities or development related to grazing.

**Recreation Activities** – There are no Forest Service system trails that access the river, but there is a route that is used to access the river as it carves its way down through the Box-Death Hollow Wilderness area. The access route starts on the “Hells Backbone Road” (FS Road #30153) and steeply descends down a rocky rough route. This access point acts as the only way to enter or leave the drainage without hike 20 or miles. The route receives very low use and is primarily use by hikers attempting to travel the brutal 3 to 4 day trip to the Escalante River. This route requires swimming, rock climbing, and advanced navigation skills. The lower half of the drainage is managed by the Grand Staircase-Escalante National Monument.

**Other Resource Activities** – Due to the limited access, steep terrain, and designated wilderness status other river corridor uses, such as timber harvest and farming, are not foreseeable uses.

**Special Designations** – The Death Hollow Creek river corridor is entirely located in the Box-Death Hollow Roadless Area (1999 Roadless Areas). The purpose of designated roadless areas under the 1999 Road Rule was “to restrict certain activities such as road construction and reconstruction into the unroaded portions of inventoried roadless areas and to establish a process for evaluating possible limitations on activities in other uninventoried unroaded areas through forest planning at the local level.”

The river corridor is also entirely located within the Box-Death Hollow Wilderness area. This area was designated in 1984 under the Utah Wilderness Act. The purpose of the wilderness designation was to ensure this area was free from modern human control or manipulation, was undeveloped and natural, and provides outstanding opportunities for solitude and a primitive and unconfined type of recreation.

**Socio-Economic Environment** – The river segment is located within Garfield County. Boulder and Escalante are the two closest towns. Access to the area is provided by Highway 12 – an All-American Road. Cottonwood Canyon flows from the Dixie National Forest onto the Grand Staircase-Escalante National Monument.



Garfield County is a largely rural county where traditional natural resource economic endeavors have dominated historically. In recent years, there has been a growth in recreation, tourism, and services. Much of this growth in recreation and tourism can be attributed to the designation of the Grand Staircase-Escalante National Monument in 1996. The county is struggling to retain rural traditions and lifestyles as well as “working” connections with the land. In the face of rising land values and globalization, traditional industries such as farming and ranching are becoming more difficult. Second home ownership has increased in the county dramatically. Over 60% of property tax notices in Garfield County are sent out of the county (39% out of state or country). Educating these occasional land users about special values and proper use is becoming more difficult.

A recent visitor study of the Grand Staircase-Escalante National Monument indicates that approximately 600,000 people visit the area every year. While most of the visitors remain in the frontcountry visitor areas, exploration into the backcountry is increasing. Visitors come from throughout the United States and the world. About 14% of visitors are from Utah, 13% from California, 6% from Arizona, 5% from Colorado, and 10% from other western states. About 30% come from the other 39 states leaving 23% from other countries. The average visitor spends three days in the area. Only 20% of these visitors indicated that the Monument was their primary destination. Many of these visitors end up exploring the forest. The most common visitor activities reported were hiking, photography, scenic driving, and viewing natural features. Escalante and Bryce Canyon are the two most visited communities near the Monument. Boulder also experienced high visitation. The average amount spent by a group of three to the area was just under \$500. This means that more than \$20.6 million is being directly spent in Garfield and Kane counties because of the designated Monument. This is the equivalent of more than 430 full-time jobs. (A Front Country Visitor Study for the Grand Staircase-Escalante National Monument, Utah State University, Professional Report IORT PR2006-01, April 2006).

More specifically, trends and conditions:

**Garfield County**, the fifth largest county in the state has the highest percentage of federal land (over 90%) in a county in the state of Utah.<sup>15</sup> The county contains over one million acres of National Forest System lands (including the Box-Death Hollow Wilderness Area) and large areas of other federal land, including portions of Grand Staircase-Escalante National Monument, Bryce Canyon National Park, Capitol Reef National Park, and Glen Canyon National Recreation Area. There are only about 170,000 acres of private land in the county. Public lands provide both challenges and opportunities for economic development in the county. The county is sparsely populated and is only projected to grow at a 1.0 percent annual rate between 2005 and 2050, a rate below the state average.

According to a 2003 Utah Bureau of Economic Analysis Report, Garfield County residents had one of the five lowest levels of total personal income in the state for 2003. Additionally, Garfield County had the second highest unemployment rate (10.8 percent) in the state according to 2003 Utah Department of Workforce Services information, exceeded only by Emery County’s 11.0 percent unemployment rate. Slow job growth and unemployment are recurrent problems for the county. Traditionally, county residents have relied primarily upon ranching and timber. While there is a desire to retain these traditional sources of economic opportunity, services related to recreation and tourism are growing quickly in the county. Services are projected to increase from a 30.1 percent share in the Garfield County economy in 2005 to a 37.8 percent share in 2030 (State of Utah 2003).

According to Garfield County, the growth in the recreation and tourism industries has not been strong enough to provide the economic growth that has been achieved in more diverse parts of the state (Bremner 2006).<sup>16</sup> While these services (mostly related to leisure and hospitality) represent the largest

sector in the Garfield County economy, government jobs (the sector ranked second) make up a much higher percentage of payroll wages (State of Utah 2003). There is a perception that leisure and hospitality jobs will not pay as much as jobs in other more traditional sectors.<sup>17</sup> According to Garfield County, “. . . Garfield County is struggling economically. Schools are showing declining enrollment, and additional natural resource based industries have been all but eliminated in the county. . . . Garfield County is struggling and unless changes [in land management and opportunities] are made relatively soon, things will get tougher,” (Bremner 2006). Also according to Garfield County Commissioner Maloy Dodds in testimony to Congress, “. . . most tourist-generated jobs generally are minimal skill, minimum wage jobs – not the kind that can support a family.” Another important fact that the Commissioner noted, “Federal destination areas [are] a mixed blessing at best” for Garfield County because increased visitors can be a burden to the county in terms of increased cost of garbage and search and rescue operations (Testimony to House Resources Committee’s Forest and Forest Health Subcommittee, June 15, 2005).

The closest communities to the river segment are Escalante and Boulder. Escalante is projected to grow from about 800 people in 2000 to about 1300 in 2050. Boulder is projected to grow from 180 in 2000 to around 300 in 2050.

The river segment and the areas below Highway 12 are also used regularly by residents of Wayne County.

**Wayne County** has the second highest percentage of federal land of any county in the state. The county contains about 160,000 acres of National Forest System lands. The county contains the second fewest acres of private land in the state, trailing only Daggett County (which is four times smaller than Wayne County) by about 8,000 acres. From 2004 to 2005, Wayne County was only one of three counties to register negative annual population growth. The county had a -0.6% growth rate (the lowest in the State) (State of Utah 2006). However, from 2005 to 2050, the county is projected to nearly double in population and grow at a 1.2 percent annual growth rate (State of Utah 2005).

Education and health services are the largest sector in the Wayne County economy. This sector is buoyed by the presence of Aspen Health Services’ Aspen Achievement Academy, a wilderness therapy program that is a major county employer. Headquartered in Loa, the program operates on BLM and Forest Service lands. Government is the second largest sector in the county. Since 1980 agriculture has decreased dramatically and services have increased, a trend that is projected to continue into 2030. In 1980, agriculture made up 26.9 percent of the economy, while services took only a 3.5 percent share. By 2002, agriculture had declined to 13.8 percent and services had increased to 24.9 percent. In 2030, *People and the Forests* projects that agriculture will take a 6.5 percent share, while services will have increased to 30.3 percent (State of Utah 2003). This increase is visible in the increasingly popular tourist venue of Torrey at the gateway to Capitol Reef National Park.

While agriculture continues to decline, it is an important part of the county’s traditions and customs. Many county residents work multiple jobs to keep the traditions of the past alive. The Wayne County General Plan identifies tourism promotion as an important economic development tool; however, there is concern over preserving quality of life while implementing this strategy.

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<sup>17</sup> In the book *Visions of the Grand Staircase-Escalante* (compiled at the time of the Grand Staircase-Escalante National Monument planning process in the 1990s), Gail Blattenberger and David Kiefer acknowledge, “[m]inimum wages plus tips at Ruby’s Inn are what the locals [in Garfield County] envisage from the service industry, but high tech service enterprises are also viable given an investment in communications infrastructure.” Blattenberger and Kiefer suggest that while based on past performance “economic well-being” is clearly an issue in Kane and Garfield counties, “[e]xtractive industries are not an optimal or even a viable solution to the economic situation in these counties.” Furthermore, “change will certainly come to these economies” and be met with “resistance (because of) the desire for a land-based economy (which is) seen as crucial to the quality of life in the rural West.” According to the authors, the key is to “find ways of preserving our land-based Western heritage and lifestyle (which are so important to rural residents) along with the natural treasures of the countryside.” Roughly 10 years later, we seem to face the same conditions, trends, attitudes, fears, opportunities, and challenges (Blattenberger and Kiefer 1998).

Wayne County continues to struggle with issues of poverty. The county's 1999 poverty rate exceeded 15 percent, almost one and one-half times the state average (State of Utah 2003). Total personal income in Wayne County is the fourth lowest in the state. Growth rates of total personal income were second to last in the state from 2000 to 2003 (Bureau of Economic Analysis 2003).

Teasdale, Grover, and Torrey are the closest towns in Wayne County to the river segment. Torrey, population 171 (2005), is not expected to grow dramatically in the next 50 years. Other communities in Wayne County (e.g., Teasdale and Grover) are not expected to grow rapidly.

**Current Administration and Funding Needs if Designated** – The current administering agency is the USFS. The Dixie National Forest in cooperation with the GSENM would administer and manage a designated river segment.

The following information is based on 2001 data, which doesn't account for inflation over the past six years, but is the best available data. If a river is designated as Wild, Scenic, or Recreational, the actual cost of preparing the comprehensive river management plan would average \$200,000 per plan for 86 segments, which would cost approximately \$17.2 million the first two to three years following designation. It was estimated that annual management costs for a high complexity river would be \$200,000; a moderate complexity river would be \$50,000; and a low complexity river at \$25,000. Using an average of complexity costs, it would cost the Forest Service around \$7.8 million annually for 86 segments. (Estimated Costs of Wild and Scenic Rivers Program - V. 091104)

#### **SUITABILITY FACTOR ASSESSMENT:**

**(1) The extent to which the State or its political subdivisions might participate in the shared preservation and administration of the river, including costs, should it be proposed for inclusion in the National System.**

Not applicable as the segment is entirely on land managed by the National Forest.

**(2) The state/local government's ability to manage and protect the outstandingly remarkable values on non-federal lands. Include any local zoning and/or land use controls that appear to conflict with protection of river values.**

Not applicable as the segment is entirely on land managed by the National Forest.

**(3) Support or opposition to designation.**

Garfield County is working on a Resource Management Plan for all lands in the county. They have included an analysis of Wild and Scenic Rivers in their discussions. While their RMP supports the designation of Cataract Canyon (Colorado River) and the Dirty Devil River as Wild and Scenic Rivers, the county does not support the designation of Death Hollow Creek.

During the Dixie and Fishlake National Forests eligibility process, the county expressed repeated concern over the eligibility determinations made for this and other river segments on the Escalante Ranger District. The county does not believe that the Escalante River system is suitable because its flow is too regulated by irrigators.

When representatives of the Forest met with staff from the Navajo Nation and Hopi Nation in July 2006, the Tribes indicated that they favored "preservation" of forest resources including Wild and Scenic Rivers. No official communications from the Tribes confirming this support have been received.

During the scoping and DEIS comment periods, the forest received many comments on Death Hollow Creek. Many people and groups expressed interest in seeing this river segment designated. It was part of a group of rivers suggested for a positive suitability finding by a group of conservation organizations. All

of the three organized campaigns supported a positive suitability finding for this segment. Garfield County and others are opposed to designation. Opposition from these entities doesn't appear to be as strong given that the segment is already protected by Wilderness designation. Many have questioned whether the additional protections available under wild and scenic rivers designation are necessary to protect the river segment.

**(4) The consistency of designation with other agency plans, programs or policies and in meeting regional objectives.**

Downstream from the forest boundary, the GSENM found Death Hollow Creek to be suitable for designation because of "high scenic quality, part of an ONA, southwestern willow flycatcher habitat, prehistoric sites, dinosaur tracks, and riparian areas" (Appendix 11, GSENM FEIS Monument Plan).

The Dixie National Forest, Glen Canyon National Recreation Area, Bryce Canyon National Park, and GSENM all worked together on eligibility for this river segment. Final determinations of suitability were reserved for individual agencies to make on their own.

**(5) Contribution to river system or basin integrity.**

The GSENM Management Plan and associated analysis identified Death Hollow Creek among the primary contributors to the Escalante River system.

**(6) Demonstrated or potential commitment for public volunteers, partnerships, and/or stewardship commitments for management and/or funding of the river segment.**

No commitment has been expressed.